UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Analytical results and sample locality map of stream-sediment and heavy-mineral-concentrate samples from the Chuckwalla Mountains Wilderness Study Area (CDCA-348), Riverside County, California

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STUDIES RELATED TO WILDERNESS

Bureau of Land Management Wilderness Study Areas

The Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976) requires the U.S. Geological Survey and the U.S. Bureau of Mines to conduct mineral surveys on certain areas to determine their mineral values. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a mineral survey of the Chuckwalla Mountains Wilderness Study Area (CDCA-348), California Desert Conservation Area, Riverside County, California.

INTRODUCTION

In March 1982, we conducted a reconnaissance geochemical survey of the Chuckwalla Mountains Wilderness Study Area, Riverside County, California.

The Chuckwalla Mountains Wilderness Study Area comprises about 90 mi^2 (233 km) in the southeast corner of Riverside County, California, and lies just south of Interstate Highway 10 at Desert Center, California, which is approximately 180 mi east-southeast of Los Angeles (see figure 1).

Geographic setting

The Chuckwalla Mountains (figure 1) form one of the eastern ranges of the Tranverse Ranges of California (Powell, 1981) and cover an area of about 215 mi^2 (557 km^2), mostly within a squarish block north of an unnamed east-draining wash that bisects the range. South of that wash, the range is narrow and trends southeast to Graham Pass where it merges with the east-west trending Little Chuckwalla Mountains.

The range rises abruptly from the desert floor and reaches 4504 ft at Black Butte and 4216 at Pilot Mountain in the south-central part of the study area. The northern block of the Chuckwalla Mountains is flanked by bajadas on all sides; the southern block is flanked by a bajada to the northeast. At the base of the range on its northeast flank, the desert floor varies in elevation from about 900 to 1600 ft, whereas on the southwest flank of the range, the desert floor varies from about 1400 to 2600 ft. The Chuckwalla Mountains are nearly transected by three major drainages--Corn Springs Wash, Ship Creek, and the unnamed wash that separates the northern and southern blocks of the range. These washes all drain to the east along the traces of east-west trending Cenozoic faults.

The Chuckwalla Mountains Wilderness Study Area is split by a corridor along Corn Springs Wash; embayments into each segment exclude areas with numerous mines that in the past produced precious and base metals and prospects, reflecting present day mining interest and the roads leading to them. These roads provide ready access to the Wilderness Study Area.

Geologic setting

The Chuckwalla Mountains Wilderness Study Area contains the crystalline rocks of a Mesozoic batholith and intruded Precambrian and Paleozoic country rock (Powell and others, 1984). In the Chuckwalla Mountains as well as in

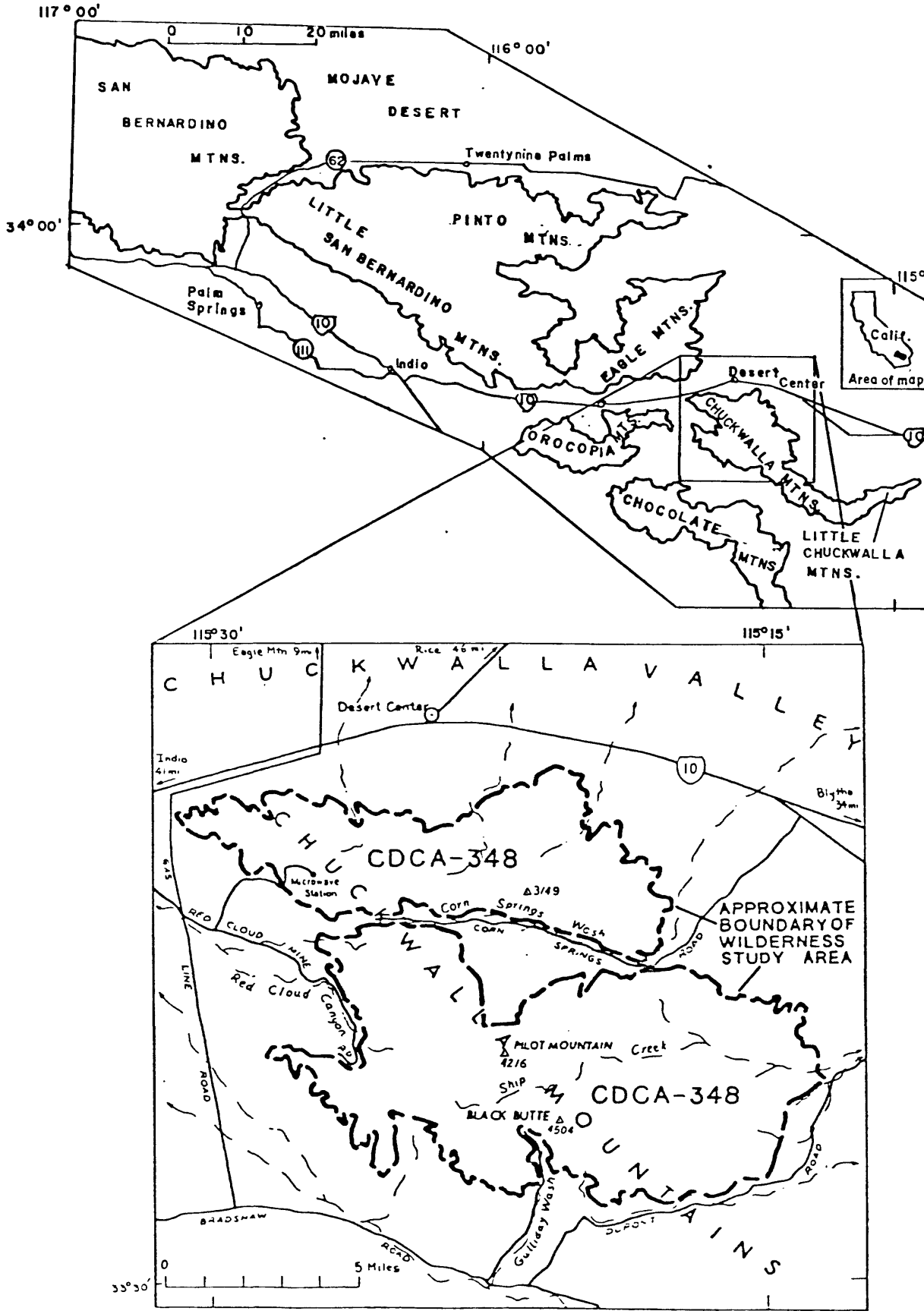

Figure 1. Location map of the Chuckwalla Mountains Wilderness Study Area, Riverside County, California.

several nearby mountain ranges, prebatholithic rocks are divisible into two lithologically distinct terranes: the Joshua Tree and San Gabriel terranes of Powell (1981, 1982). The two terranes are superposed along a regional, prebatholithic thrust fault system referred to as the Red Cloud system.

The Joshua Tree terrane is the structurally lower of the two terranes and consists of Precambrian granite capped by a metamorphosed paleosol and orthoquartzite. The San Gabriel terrane includes metasedimentary gneiss, intruded by granodioritic augen gneiss metamorphosed to amphibolite grade in turn underlain at lower levels of exposure by various granulitic gneisses.

Mesozoic plutonic rocks comprise two batholithic suites, both of which intrude the Joshua Tree and San Gabriel terranes and the Red Cloud thrust fault system. West-northwest-, north-northwest-, and northeast-trending swarms of felsic intermediate, and mafic dikes crosscut the Mesozoic plutons of both suites in the Chuckwalla Mountains and throughout the region. The orientations of the dikes are parallel to the fracture orientations that crosscut all Mesozoic and older rocks in the region. Gold, scheelite, molybdenite, fluorite, and copper minerals occur in quartz veins and bleached and limonite-stained altered rock spatially near propylitically altered mafic dikes. Cenozoic strike-slip faults with left-lateral displacement bound the northern Chuckwalla Mountains on both the north and south and also transect the range (Powell and others, 1984).

Previous Studies

The U.S. Bureau of Land Management did a geochemical study of the Chuckwalla Mountains Wilderness Study Area that was used in a Geology-Energy-Minerals (GEM) Resources Area Report and a Management Summary of the mineral resource potential. This information, presumably gathered between 1978 and 1982, became available to the U.S. Geological Survey in 1982 and was reviewed by K. C. Watts prior to undertaking the geochemical study for the U.S. Geological Survey. It was then the opinion of K. C. Watts that the geochemical data obtained by the U.S. Bureau of Land Management was not sufficiently detailed for an adequate mineral resource evaluation. Although the U.S. Bureau of Land Management data compares well in both sample media used and analytical results obtained, with that subsequently gathered, it is too general in scope for more than a cursory evaluation of the presence or absence of certain mineral commodities. The data are not sufficient to determine the patterns and nature of mineralization in the area. As a result, the general framework established by the U.S. Bureau of Land Management was expanded upon in the later work. Since close comparability of data was deemed necessary it was decided to not attempt an integration of U.S. Bureau of Land Management data into the USGS data set.

METHODS OF STUDY

Sample Collection

We collected samples at 203 sites (plate 1). At nearly all of those sites, we collected both a stream-sediment sample and a heavy-mineral-concentrate sample. We analyzed 203 stream-sediment samples and 196 panned-concentrate samples. Table 4 lists 22 stream-sediments and 22 heavy-mineral concentrate samples collected in conjunction with this study. These samples are outside of the map area and, consequently, do not appear on the sample locality map.

Stream-sediment samples

Analyses of the stream-sediment samples represent the chemistry of the rock material eroded from the drainage basin upstream from each sample site. Such information is useful in identifying those basins which contain concentrations of elements that may be related to mineral deposits.

The stream-sediment samples consisted of active alluvium collected primarily from first-order (unbranched) and second-order (below the junction of two first-order) streams as shown on USGS topographic maps (scale = 1:62,500). Each sample was composited from several localities within an area that may extend as much as 50 ft from the site plotted on the map.

Heavy-mineral-concentrate samples

We collected heavy-mineral-concentrate samples from the same active alluvium as the stream-sediment samples. Each bulk sample was screened with a 2.0-mm (10-mesh) screen to remove the coarse material. The sediment passing through the screen was panned until most of the quartz, feldspar, organic material, and clay-sized material was removed. The sample was air dried.

Sample Preparation

Only the stream-sediment samples required extensive preparation. We sieved the stream-sediment samples through a 10-mesh screen and the minus-10-mesh material was retained. The samples were air dried and sieved to 80 mesh (0.17 mm) using stainless steel sieves. The portion of the sediment passing through the sieve was saved for analysis.

After panning the sediment, we used bromoform to separate and remove the remaining quartz and feldspar from the heavy-mineral concentrate. The heavy minerals (specific gravity 2.8) were separated into three fractions using a large electromagnet (in this case a modified Frantz Isodynamic Separator). The most magnetic material (largely magnetite) was discarded. The second fraction (largely ferromagnesian silicates and iron oxides) was saved for analysis/archival storage. The third fraction (the least magnetic material including nonmagnetic ore minerals, zircon, sphene, etc.) was divided into two splits using a Jones splitter. One split was hand ground for spectrographic analysis; the other split was saved for mineralogical analysis.

The magnetic separates discussed are the same separates that would be produced by removing the magnetite with a hand magnet and then using a Frantz Isodynamic Separator set at a slope of 15° and a tilt of 10° with a current of 0.1 ampere to remove the ilmenite, and a current of 1.0 ampere to split the remainder of the sample into magnetic and nonmagnetic fractions.

Sample Analysis

Spectrographic method

We analyzed the stream-sediment and heavy-mineral-concentrate samples for 31 elements using a semiquantitative, direct-current arc emission spectrographic method (Grimes and Marranzino, 1968). The elements analyzed and their lower limits of determination are listed in table 1. Spectrographic results

were obtained by visual comparison of spectra derived from the sample against spectra obtained from standards made from pure oxides and carbonates. Standard concentrations are geometrically spaced over any given order of magnitude of concentration as follows: 100, 50, 20, 10, and so forth. Samples whose concentrations are estimated to fall between those values are assigned values of 70, 30, 15, and so forth. The precision of the analytical method is approximately plus or minus one reporting interval at the 83 percent confidence level and plus or minus two reporting intervals at the 96 percent confidence level (Motooka and Grimes, 1976). Values determined for the major elements (iron, magnesium, calcium, and titanium) are given in weight percent; all others are given in parts per million (micrograms/gram) (table 1). Analytical data for samples from the Chuckwalla Mountains Wilderness Study Area are listed in Tables 2 and 3.

ROCK ANALYSIS STORAGE SYSTEM

Upon completion of all analytical work, the analytical results were entered into a computer-based file called Rock Analysis Storage System (RASS). This data base contains both descriptive geological information and analytical data. Any or all of this information may be retrieved and converted to a binary form (STATPAC) for computerized statistical analysis or publication (VanTrump and Miesch, 1976).

DESCRIPTION OF DATA TABLES

Tables 2-3 list the analyses for the samples of stream sediment and heavy-mineral concentrate, respectively. For the two tables, the data are arranged so that column 1 contains the USGS-assigned sample numbers. These numbers correspond to the numbers shown on the site location maps (plate 1). Columns in which the element headings show the letter "s" preceding the element symbol are emission spectrographic analyses. A letter "N" in the tables indicates that a given element was looked for but not detected at the lower limit of determination shown for that element in table 1. If an element was observed but was below the lowest reporting value, a "less than" symbol (>) was entered in the tables in front of the lower limit of determination. If an element was observed but was above the highest reporting value, a "greater than" symbol (<) was entered in the tables in front of the upper limit of determination. If an element was not looked for in a sample, two dashes (--) are entered in tables 2-3 in place of an analytical value. Because of the formatting used in the computer program that produced tables 2-3, some of the elements listed in these tables (Fe, Mg, Ca, Ti, Ag, and Be) carry one or more nonsignificant digits to the right of the significant digits. The analysts did not determine these elements to the accuracy suggested by the extra zeros.

REFERENCES CITED

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TABLE 1.--Limits of determination for the spectrographic analysis of stream sediments, based on a 10-mg sample

[The spectrographic limits of determination for heavy-mineral-concentrate samples are based on a 5-mg sample, and are therefore two reporting intervals higher than the limits given for stream sediments]

Elements	Lower determination limit	Upper determination limit
	Percent	
Iron (Fe)	0.05	20
Magnesium (Mg)	.02	10
Calcium (Ca)	.05	20
Titanium (Ti)	.002	1
	Parts per million	
Manganese (Mn)	10	5,000
Silver (Ag)	0.5	5,000
Arsenic (As)	200	10,000
Gold (Au)	10	500
Boron (B)	10	2,000
Barium (Ba)	20	5,000
Beryllium (Be)	1	1,000
Bismuth (Bi)	10	1,000
Cadmium (Cd)	20	500
Cobalt (Co)	5	2,000
Chromium (Cr)	10	5,000
Copper (Cu)	5	20,000
Lanthanum (La)	20	1,000
Molybdenum (Mo)	5	2,000
Niobium (Nb)	20	2,000
Nickel (Ni)	5	5,000
Lead (Pb)	10	20,000
Antimony (Sb)	100	10,000
Scandium (Sc)	5	100
Tin (Sn)	10	1,000
Strontium (Sr)	100	5,000
Vanadium (V)	10	10,000
Tungsten (W)	50	10,000
Yttrium (Y)	10	2,000
Zinc (Zn)	200	10,000
Zirconium (Zr)	10	1,000
Thorium (Th)	100	2,000

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA

[N, NOT DETECTED; <, DETECTED BUT BELOW THE LIMIT OF DETERMINATION SHOWN; >, DETERMINED TO BE GREATER THAN THE VALUE SHOWN.]

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO	S-CR
CW001	33 39 54	115 29 54	5	1.0	1.0	.5	700	N	N	N	15	500	1	N	N	10	70
CW002	33 39 22	115 28 36	5	1.0	1.0	.3	700	N	N	N	20	500	2	N	N	20	50
CW003	33 38 57	115 28 5	10	2.0	1.0	.5	700	N	N	N	15	300	1	N	N	30	50
CW004	33 38 13	115 28 0	10	2.0	1.0	1.0	1,000	N	N	N	20	500	1	N	N	20	50
CW005	33 38 11	115 28 1	5	1.0	1.0	.5	700	N	N	N	20	500	1	N	N	15	50
CW006	33 37 50	115 27 6	10	2.0	1.0	.5	700	N	N	N	20	300	1	N	N	20	50
CW007	33 38 0	115 26 23	20	2.0	1.0	.5	700	N	N	N	30	300	1	N	N	30	100
CW008	33 37 42	115 25 32	10	1.0	1.0	1.0	1,000	N	N	N	20	500	2	N	N	20	70
CW009	33 37 24	115 26 0	5	1.0	1.0	.5	700	N	N	N	20	500	1	N	N	15	70
CW010	33 37 22	115 26 5	5	1.0	1.0	.5	700	N	N	N	20	500	1	N	N	15	70
CW011	33 37 29	115 27 25	5	1.0	1.0	1.0	700	N	N	N	30	700	1	N	N	15	70
CW012	33 36 12	115 26 27	5	1.0	1.0	.5	700	.5	N	N	20	500	2	N	N	10	50
CW013	33 36 2	115 26 32	5	1.0	1.0	.5	700	N	N	N	10	500	2	N	N	20	70
CW014	33 35 26	115 26 0	5	1.0	1.0	.5	700	N	N	N	20	700	2	N	N	20	50
CW015	33 35 22	115 26 9	10	1.0	1.0	1.0	1,000	N	N	N	20	500	2	N	N	15	50
CW016	33 34 54	115 26 22	2	1.0	1.0	.5	700	N	N	N	20	500	1	N	N	15	50
CW017	33 34 47	115 26 17	2	1.0	1.0	.5	700	N	N	N	30	500	2	N	N	15	50
CW018	33 34 48	115 26 12	10	1.0	1.0	1.0	1,500	N	N	N	20	500	2	N	N	20	50
CW019	33 33 30	115 26 17	5	2.0	1.0	.5	700	N	N	N	20	500	2	N	N	20	70
CW020	33 33 57	115 27 18	5	1.0	1.0	.5	1,000	N	N	N	20	500	1	N	N	15	50
CW021	33 34 18	115 27 51	5	1.0	1.0	.5	1,000	N	N	N	20	500	1	N	N	15	50
CW022	33 35 32	115 28 42	2	1.0	2.0	.5	700	N	N	N	20	500	2	N	N	15	50
CW023	33 40 48	115 29 54	5	1.0	1.0	.5	700	N	N	N	20	500	3	N	N	20	50
CW024	33 40 47	115 28 48	5	1.0	1.0	.5	1,000	N	N	N	20	700	2	N	N	15	70
CW025	33 40 36	115 26 19	7	1.0	1.0	.5	1,000	N	N	N	20	700	2	N	N	20	70
CW026	33 40 36	115 26 7	5	2.0	1.0	.5	700	N	N	N	10	700	1	N	N	30	70
CW027	33 40 39	115 24 14	5	1.0	1.0	.5	700	N	N	N	20	700	2	N	N	20	50
CW028	33 41 38	115 20 24	10	1.0	1.0	1.0	1,000	N	N	N	50	700	2	N	N	30	50
CW029	33 41 19	115 20 7	5	2.0	1.0	.5	700	N	N	N	20	1,000	2	N	N	20	70
CW030	33 41 15	115 27 9	5	1.0	1.0	.3	700	N	N	N	10	500	2	N	N	15	50
CW031	33 40 36	115 28 12	5	1.0	1.0	.5	700	N	N	N	30	1,000	2	N	N	15	50
CW032	33 40 32	115 28 17	5	1.0	1.0	.5	700	N	N	N	10	1,000	2	N	N	10	50
CW033	33 39 30	115 25 39	5	1.0	1.0	.5	700	N	N	N	20	700	2	N	N	15	50
CW034	33 39 38	115 22 57	5	1.0	1.0	.5	1,000	N	N	N	10	700	2	N	N	15	50
CW035	33 39 35	115 22 55	7	2.0	1.0	.5	1,000	N	N	N	20	700	50	N	N	30	50
CW036	33 38 38	115 22 41	10	2.0	2.0	1.0	1,500	N	N	N	20	700	1	N	N	30	70
CW037	33 40 3	115 20 16	10	2.0	2.0	.5	1,000	N	N	N	20	700	2	N	N	30	70
CW038	33 40 15	115 19 50	10	1.0	2.0	1.0	1,000	N	N	N	20	700	2	N	N	20	50
CW039	33 40 27	115 18 36	7	2.0	2.0	.5	700	N	N	N	20	700	1	N	N	30	70
CW040	33 39 39	115 18 44	7	2.0	2.0	.5	700	N	N	N	20	700	2	N	N	15	70
CW041	33 39 6	115 18 7	10	2.0	2.0	.5	700	N	N	N	20	700	2	N	N	20	70
CW042	33 38 5	115 17 51	5	1.0	1.0	.5	500	N	N	N	20	500	2	N	N	20	70
CW043	33 38 55	115 20 30	5	1.0	1.0	.2	500	N	N	N	10	500	2	N	N	10	20
CW044	33 39 0	115 20 29	10	2.0	2.0	1.0	1,500	N	N	N	20	500	2	N	N	20	100
CW045	33 41 26	115 21 24	10	1.0	1.0	.5	1,000	N	N	N	20	500	2	N	N	20	70

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA

SAMPLE	S-CU	S-IA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	S-TH
CW001	15	100	N	20	20	50	N	15	<10	200	100	N	100	<200	700	N
CW002	20	100	N	20	30	50	N	15	<10	200	100	N	70	<200	700	N
CW003	20	100	N	20	20	30	N	20	<10	200	200	N	70	<200	700	N
CW004	20	200	N	20	30	30	N	20	N	300	200	N	70	<200	1,000	N
CW005	15	100	N	20	30	200	N	15	10	200	200	N	100	<200	1,000	N
CW006	15	100	N	20	20	30	N	15	<10	200	300	N	100	<200	700	N
CW007	30	100	N	<20	30	30	N	15	N	200	500	N	30	<200	500	N
CW008	15	200	N	<20	30	30	N	20	<10	300	200	N	100	<200	1,000	N
CW009	15	100	N	<20	30	30	N	15	N	200	100	N	50	<200	500	N
CW010	15	100	N	20	30	50	N	15	10	200	100	N	150	<200	1,000	N
CW011	15	100	N	<20	30	50	N	15	<10	500	150	N	100	<200	1,000	N
CW012	100	100	N	20	20	200	N	15	<10	500	100	N	100	<200	500	N
CW013	15	100	N	<20	30	50	N	15	<10	200	100	N	50	<200	200	N
CW014	20	100	15	<20	20	30	N	20	N	500	100	N	100	<200	500	N
CW015	15	500	N	<20	20	70	N	30	N	200	100	N	500	<200	1,000	100
CW016	20	100	N	<20	20	50	N	15	N	200	100	N	50	<200	500	N
CW017	15	100	N	<20	20	50	N	15	N	200	100	N	50	<200	500	N
CW018	15	200	N	<20	20	50	N	30	N	200	100	N	200	<200	1,000	100
CW019	15	100	N	<20	50	50	N	15	N	200	150	N	100	<200	500	N
CW020	15	100	N	<20	20	70	N	15	N	200	100	N	100	<200	500	N
CW021	15	100	N	<20	15	70	N	15	N	200	100	N	100	<200	500	N
CW022	15	100	N	<20	20	70	N	20	N	200	100	N	100	<200	500	N
CW023	15	200	N	20	20	200	N	20	20	200	100	N	200	<200	700	N
CW024	15	200	N	20	20	50	N	20	10	200	50	N	200	<200	500	N
CW025	15	100	N	20	20	30	N	20	<10	200	150	N	100	<200	1,000	100
CW026	20	100	N	<20	20	50	N	20	<10	200	200	N	50	<200	1,000	N
CW027	15	100	N	20	20	50	N	20	<10	200	200	N	100	<200	1,000	100
CW028	20	300	N	<20	20	30	N	20	N	200	500	N	150	<200	1,000	N
CW029	20	100	N	20	30	50	N	20	<10	500	150	N	50	<200	1,000	N
CW030	15	150	N	20	20	50	N	10	<10	200	100	N	70	<200	200	100
CW031	15	100	N	20	20	50	N	15	10	200	70	N	200	<200	1,000	N
CW032	15	100	10	50	20	70	N	15	15	200	50	N	500	<200	1,000	N
CW033	15	150	5	20	20	30	N	15	N	300	100	N	50	<200	1,000	N
CW034	15	100	N	30	15	50	N	15	10	300	100	N	100	<200	1,000	150
CW035	20	100	N	20	30	30	N	20	<10	500	200	N	50	<200	1,000	N
CW036	20	100	N	<20	50	20	N	20	N	500	200	N	100	<200	1,000	N
CW037	20	100	N	<20	20	20	N	20	N	500	200	N	50	200	1,000	N
CW038	15	100	N	30	20	20	N	20	N	500	200	N	100	<200	1,000	N
CW039	20	100	N	20	30	50	N	15	<10	300	200	N	30	<200	300	N
CW040	15	50	N	20	20	50	N	20	<10	300	100	N	70	<200	1,000	N
CW041	20	100	N	30	20	30	N	15	N	300	200	N	50	<200	1,000	N
CW042	15	50	N	20	20	50	N	15	N	200	150	N	50	<200	300	N
CW043	15	50	N	<20	15	20	N	15	N	200	200	N	50	<200	1,000	N
CW044	20	100	N	<20	30	20	N	20	N	500	500	N	100	<200	1,000	N
CW045	15	100	N	<20	20	20	N	15	N	500	200	N	100	<200	1,000	N

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO	S-CR
CW046	33 40 44	115 22 59	5	1.0	1.0	.5	1,000	N	N	N	30	500	2	N	N	20	50
CW047	33 37 8	115 23 18	10	2.0	1.0	1.0	2,000	N	N	N	15	500	1	N	N	50	70
CW048	33 36 48	115 22 51	7	2.0	1.0	1.0	1,000	N	N	N	20	500	1	N	N	20	100
CW049	33 36 36	115 22 26	10	1.0	1.0	.5	1,000	N	N	N	15	200	1	N	N	30	70
CW050	33 35 52	115 22 59	5	1.0	1.0	.5	1,000	N	N	N	20	500	1	N	N	15	100
CW051	33 36 33	115 24 15	10	1.0	1.0	.5	1,000	N	N	N	15	300	1	N	N	15	100
CW052	33 35 49	115 24 23	5	1.0	1.0	.3	1,000	N	N	N	15	300	2	N	N	15	70
CW053	33 35 43	115 24 25	5	1.0	1.0	.5	1,000	N	N	N	15	300	2	N	N	20	70
CW054	33 36 13	115 25 3	5	1.0	1.0	.5	700	N	N	N	20	300	1	N	N	15	70
CW055	33 36 49	115 24 36	5	1.0	1.0	.5	700	N	N	N	10	300	1	N	N	15	70
CW056	33 37 30	115 23 49	20	1.0	.7	.2	700	N	N	N	10	300	1	N	N	70	100
CW057	33 39 48	115 22 30	5	1.0	1.0	.5	1,000	N	N	N	10	300	1	N	N	20	70
CW058	33 36 31	115 27 18	5	1.0	1.0	.5	700	N	N	N	20	300	1	N	N	15	70
CW059	33 36 23	115 27 21	5	1.0	1.0	.5	700	N	N	N	10	500	1	N	N	15	50
CW060	33 34 0	115 23 21	5	1.0	1.0	.5	700	N	N	N	10	300	1	N	N	15	100
CW061	33 33 56	115 23 27	10	1.0	1.0	1.0	2,000	N	N	N	15	500	1	N	N	30	200
CW062	33 34 12	115 22 44	5	1.0	1.0	.5	700	N	N	N	20	500	1	N	N	20	70
CW063	33 34 30	115 21 50	5	1.0	1.0	.5	700	N	N	N	15	500	1	N	N	30	100
CW064	33 34 24	115 21 12	5	1.0	1.0	.5	700	N	N	N	20	500	1	N	N	15	100
CW065	33 33 17	115 21 18	5	1.0	1.0	.3	500	N	N	N	15	500	1	N	N	15	70
CW066	33 33 13	115 21 25	5	1.0	1.0	.5	700	N	N	N	15	500	1	N	N	15	100
CW067	33 32 38	115 23 51	5	1.0	1.0	.5	500	N	N	N	15	500	1	N	N	20	200
CW068	33 33 21	115 24 16	5	1.0	1.0	.5	500	N	N	N	20	500	1	N	N	10	70
CW069	33 33 25	115 24 24	5	1.0	1.0	.5	500	N	N	N	20	500	1	N	N	15	100
CW070	33 33 25	115 24 35	5	2.0	1.0	1.0	1,000	N	N	N	10	500	3	N	N	20	70
CW071	33 33 3	115 25 45	5	1.0	1.0	.5	1,000	N	N	N	20	500	2	N	N	15	50
CW072	33 33 2	115 24 53	5	2.0	1.0	1.0	1,000	N	N	N	15	500	1	N	N	20	70
CW073	33 32 5	115 22 48	5	2.0	1.0	.5	1,000	N	N	N	10	500	1	N	N	20	100
CW074	33 32 0	115 21 37	5	1.0	1.0	.5	1,000	N	N	N	50	500	1	N	N	15	70
CW075	33 32 17	115 19 49	5	1.0	1.0	.5	1,000	N	N	N	10	500	1	N	N	10	50
CW076	33 32 43	115 19 55	5	1.0	1.0	.7	1,000	N	N	N	20	500	1	N	N	20	70
CW077	33 32 43	115 19 48	10	1.0	1.0	1.0	1,000	N	N	N	20	500	1	N	N	15	70
CW078	33 32 54	115 18 27	5	1.0	1.0	.5	1,000	N	N	N	10	500	2	N	N	15	50
CW079	33 33 0	115 18 29	5	2.0	1.0	.5	1,000	N	N	N	10	500	1	N	N	15	50
CW080	33 32 34	115 16 53	10	1.0	1.0	.7	1,000	N	N	N	30	500	1	N	N	15	50
CW081	33 35 10	115 19 54	5	1.0	1.0	.5	1,000	N	N	N	20	500	1	N	N	15	70
CW082	33 34 30	115 20 3	5	2.0	1.0	.7	1,000	N	N	N	20	500	1	N	N	15	70
CW083	33 36 35	115 20 55	10	2.0	1.0	.7	1,000	N	N	N	20	500	1	N	N	20	70
CW084	33 36 47	115 19 48	5	1.0	2.0	.5	1,000	N	N	N	10	500	1	N	N	15	70
CW085	33 35 0	115 18 3	10	1.0	1.0	1.0	2,000	N	N	N	30	200	1	N	N	20	50
CW086	33 36 31	115 18 6	10	1.0	1.0	.5	1,000	N	N	N	10	500	1	N	N	20	100
CW087	33 36 36	115 18 7	10	1.0	1.0	.5	1,000	N	N	N	20	500	1	N	N	20	70
CW088	33 35 41	115 17 39	5	1.0	1.0	.5	1,000	N	N	N	10	500	1	N	N	20	30
CW089	33 35 57	115 17 17	10	1.0	1.0	.7	1,000	N	N	N	20	500	1	N	N	20	100
CW090	33 35 36	115 16 31	5	1.0	1.0	.5	1,000	N	N	N	10	500	1	N	N	20	70

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	S-TH
CW046	30	100	7	<20	20	30	N	15	<10	200	200	N	50	<200	300	N
CW047	20	150	N	<20	30	20	N	15	N	200	200	N	100	<200	700	<100
CW048	20	100	N	<20	30	20	N	20	N	300	200	N	100	<200	700	N
CW049	15	200	N	<20	30	30	N	15	N	200	200	N	100	<200	1,000	<100
CW050	15	100	N	<20	50	30	N	20	N	200	100	N	100	<200	1,000	N
CW051	15	100	N	<20	30	200	N	15	N	200	200	N	100	<200	1,000	<100
CW052	15	100	N	<20	30	30	N	15	N	200	70	N	70	<200	1,000	N
CW053	20	100	5	<20	30	30	N	15	N	200	100	N	70	<200	700	N
CW054	15	200	N	<20	30	30	N	20	N	200	100	N	50	<200	500	N
CW055	15	70	N	<20	30	30	N	15	<10	200	100	N	70	<200	1,000	N
CW056	20	300	N	N	30	10	N	10	N	200	200	N	30	<200	500	N
CW057	100	100	50	<20	20	30	N	15	N	300	200	N	30	<200	500	N
CW058	15	100	N	<20	20	30	N	15	<10	200	100	N	70	<200	500	N
CW059	15	100	N	<20	20	30	N	20	<10	300	100	N	100	<200	500	N
CW060	20	100	5	<20	20	30	N	20	N	200	100	N	70	<200	500	N
CW061	50	500	N	<20	30	70	N	50	N	300	100	N	150	<200	1,000	100
CW062	15	100	N	<20	30	50	N	20	N	200	70	N	50	<200	500	N
CW063	15	200	N	<20	50	30	N	30	N	300	100	N	150	<200	300	N
CW064	15	100	N	<20	30	30	N	15	N	200	100	N	70	<200	300	N
CW065	15	50	N	<20	30	30	N	15	N	200	50	N	30	<200	300	N
CW066	15	100	N	<20	30	30	N	20	N	200	100	N	70	<200	1,000	N
CW067	15	70	N	<20	50	20	N	20	N	200	100	N	30	<200	200	N
CW068	15	70	N	<20	30	100	N	15	<10	200	50	N	30	<200	1,000	N
CW069	15	100	N	<20	30	50	N	15	<10	200	70	N	50	<200	1,000	N
CW070	15	200	N	<20	20	50	N	20	N	200	100	N	150	<200	1,000	N
CW071	15	100	N	<20	20	50	N	15	N	200	70	N	50	<200	500	N
CW072	15	200	N	<20	30	50	N	20	N	200	70	N	200	<200	1,000	<100
CW073	15	100	N	<20	30	30	N	20	N	200	100	N	50	<200	300	N
CW074	15	50	N	<20	30	30	N	15	N	200	100	N	30	<200	300	N
CW075	15	50	N	<20	20	15	N	10	N	500	100	N	50	<200	300	N
CW076	15	100	N	<20	20	20	N	20	<10	300	150	N	100	<200	500	N
CW077	20	200	N	<20	20	10	N	20	N	200	200	N	150	<200	1,000	N
CW078	70	100	5	<20	15	20	N	10	<10	300	100	N	50	<200	300	N
CW079	20	100	N	<20	15	20	N	20	N	300	100	N	50	<200	300	N
CW080	70	200	N	<20	15	30	N	10	N	300	200	N	50	<200	500	N
CW081	15	100	N	<20	30	50	N	20	N	200	100	N	70	<200	1,000	N
CW082	15	100	N	<20	30	20	N	20	<10	200	100	N	100	<200	300	N
CW083	15	100	N	<20	30	30	N	20	<10	200	200	N	100	<200	500	N
CW084	15	100	N	<20	20	50	N	15	N	200	100	N	100	<200	200	N
CW085	20	200	N	20	15	10	N	20	N	200	100	N	100	<200	1,000	N
CW086	20	50	N	N	20	20	N	20	<10	300	200	N	30	<200	300	N
CW087	15	100	N	20	20	30	N	15	<10	300	200	N	70	<200	300	N
CW088	15	50	N	N	20	15	N	20	<10	500	100	N	50	<200	200	N
CW089	15	200	N	<20	20	30	N	15	N	200	200	N	50	<200	500	N
CW090	15	50	N	<20	20	30	N	15	N	200	100	N	50	<200	500	N

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO	S-CR
CW091	33 34 22	115 15 29	10	1.0	1.0	1.0	1,000	N	N	N	10	500	1	N	N	20	70
CW092	33 33 6	115 14 30	10	1.0	1.0	1.0	1,000	N	N	N	20	500	1	N	N	15	50
CW093	33 33 17	115 16 0	5	1.0	2.0	.7	1,000	N	N	N	10	500	1	N	N	15	50
CW094	33 35 6	115 17 32	5	1.0	2.0	.7	1,000	N	N	N	10	500	1	N	N	15	70
CW095	33 31 9	115 15 30	10	2.0	1.0	1.0	2,000	N	N	N	20	500	1	N	N	50	200
CW096	33 31 12	115 15 35	5	2.0	2.0	.5	1,000	N	N	N	10	500	1	N	N	20	100
CW097	33 31 27	115 15 55	5	2.0	2.0	.7	1,000	N	N	N	10	500	1	N	N	20	150
CW098	33 31 37	115 17 0	5	2.0	2.0	.5	1,000	N	N	N	10	500	1	N	N	20	100
CW099	33 32 3	115 17 36	10	1.0	1.0	1.0	1,000	N	N	N	20	500	1	N	N	20	100
CW100	33 31 23	115 18 30	10	1.0	2.0	1.0	2,000	N	N	N	20	500	1	N	N	20	70
CW101	33 31 42	115 18 42	5	1.0	2.0	.5	1,000	N	N	N	<10	500	1	N	N	10	50
CW102	33 30 42	115 19 23	5	2.0	2.0	.5	1,000	N	N	N	20	300	1	N	N	20	70
CW103	33 30 25	115 18 41	5	1.0	2.0	1.0	2,000	N	N	N	10	300	1	N	N	20	70
CW104	33 30 15	115 17 54	5	2.0	2.0	.5	1,000	N	N	N	50	500	1	N	N	20	100
CW105	33 30 8	115 17 21	5	2.0	2.0	1.0	1,000	N	N	N	50	500	1	N	N	20	70
CW106	33 30 0	115 16 9	5	2.0	1.0	.5	700	N	N	N	10	500	1	N	N	20	100
CW107	33 30 9	115 15 44	5	2.0	2.0	.5	700	N	N	N	20	500	1	N	N	20	200
CW108	33 29 18	115 16 11	5	2.0	2.0	.7	700	N	N	N	30	500	1	N	N	20	70
CW109	33 27 25	115 14 12	3	2.0	2.0	.2	200	N	N	N	20	500	1	N	N	10	50
CW110	33 28 14	115 7 50	5	1.0	2.0	.5	500	N	N	N	20	500	1	N	N	15	70
CW111	33 28 33	115 9 0	10	1.0	1.0	.2	300	N	N	N	20	500	1	N	N	15	70
CW112	33 28 44	115 9 53	10	1.0	1.0	.5	500	N	N	N	30	500	1	N	N	20	100
CW113	33 29 35	115 10 36	5	2.0	1.0	.5	500	N	N	N	10	500	1	N	N	20	100
CW114	33 29 27	115 11 39	5	2.0	1.0	.5	500	N	N	N	20	500	1	N	N	20	70
CW115	33 29 18	115 11 53	5	2.0	1.0	.5	500	N	N	N	10	500	1	N	N	20	70
CW116	33 29 55	115 13 53	10	1.0	1.0	1.0	1,000	N	N	N	50	500	2	N	N	20	200
CW117	33 30 41	115 13 43	10	1.0	1.0	.5	700	N	N	N	30	500	1	N	N	20	100
CW118	33 28 35	115 12 20	5	2.0	1.0	.5	700	N	N	N	10	200	N	N	N	30	200
CW119	33 28 23	115 12 36	5	2.0	1.0	.5	700	N	N	N	20	300	1	N	N	20	200
CW120	33 29 21	115 13 7	10	1.0	1.0	1.0	1,000	N	N	N	20	300	1	N	N	20	100
CW121	33 29 41	115 13 36	5	1.0	1.0	1.0	1,000	N	N	N	10	500	1	N	N	50	100
CW122	33 31 29	115 14 42	10	1.0	1.0	.3	500	N	N	N	30	500	1	N	N	15	100
CW123	33 27 9	115 12 18	5	1.0	2.0	1.0	1,000	N	N	N	20	500	1	N	N	20	200
CW124	33 27 36	115 12 12	5	2.0	2.0	1.0	1,000	N	N	N	20	300	1	N	N	20	200
CW125	33 27 30	115 11 41	5	2.0	1.0	.5	700	N	N	N	20	300	1	N	N	20	150
CW126	33 26 35	115 10 55	10	2.0	1.0	1.0	1,000	N	N	N	20	300	1	N	N	30	200
CW127	33 26 14	115 10 19	5	1.0	1.0	.5	500	N	N	N	50	500	1	N	N	20	70
CW128	33 26 30	115 9 24	5	1.0	1.0	.5	1,000	N	N	N	50	500	1	N	N	20	70
CW129	33 26 2	115 7 24	10	1.0	1.0	1.0	2,000	N	N	N	10	300	1	N	N	20	200
CW130	33 26 6	115 6 0	5	1.0	2.0	.5	1,000	N	N	N	50	500	1	N	N	15	150
CW131	33 26 16	115 4 56	5	1.0	1.0	.5	700	N	N	N	50	500	1	N	N	15	100
CW132	33 26 33	115 4 50	5	1.0	1.0	.5	700	N	N	N	30	500	1	N	N	15	70
CW133	33 27 17	115 3 36	2	1.0	2.0	.2	700	N	N	N	70	500	2	N	N	10	50
CW134	33 27 30	115 3 35	5	2.0	2.0	.5	700	N	N	N	30	500	1	N	N	20	100
CW135	33 27 56	115 3 0	5	1.0	2.0	.5	500	N	N	N	20	500	1	N	N	15	100

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	S-TH
CW091	15	200	N	30	30	20	N	20	N	200	50	N	100	<200	1,000	N
CW092	15	100	N	20	30	30	N	15	N	200	50	N	100	<200	1,000	N
CW093	15	200	N	50	20	30	N	20	N	200	50	N	70	<200	1,000	N
CW094	15	200	N	20	20	30	N	20	N	300	100	N	50	<200	1,000	N
CW095	15	200	N	20	50	30	N	15	N	200	200	N	50	<200	1,000	N
CW096	15	100	N	<20	30	15	N	20	N	300	100	N	30	<200	300	N
CW097	15	50	N	<20	30	20	N	20	N	500	100	N	30	<200	300	N
CW098	15	30	N	<20	30	10	N	20	N	200	100	N	30	<200	300	N
CW099	70	200	N	<20	20	30	N	10	N	200	200	N	50	<200	500	<100
CW100	100	200	50	20	20	2,000	N	20	N	200	100	N	200	500	1,000	N
CW101	15	500	N	<20	10	30	N	10	N	500	50	N	50	<200	300	N
CW102	15	100	N	N	30	30	N	20	N	200	100	N	30	<200	200	N
CW103	15	200	N	<20	20	30	N	20	N	200	150	N	100	<200	1,000	N
CW104	15	50	N	<20	50	20	N	20	N	300	100	N	50	<200	200	N
CW105	15	30	N	20	30	30	N	20	N	300	100	N	70	<200	1,000	N
CW106	15	30	N	<20	50	10	N	15	N	300	70	N	20	<200	200	N
CW107	20	50	N	<20	50	50	N	15	N	300	100	N	30	<200	150	N
CW108	15	100	N	<20	50	15	N	20	N	300	100	N	50	<200	500	N
CW109	15	50	N	<20	10	30	N	10	N	200	50	N	50	<200	300	N
CW110	20	100	N	<20	30	30	N	15	N	200	200	N	30	<200	500	N
CW111	20	100	N	<20	30	30	N	15	N	200	200	N	30	<200	500	N
CW112	20	100	N	20	30	30	N	20	N	200	200	N	50	<200	500	N
CW113	15	100	N	<20	50	20	N	20	N	200	100	N	50	<200	200	N
CW114	15	30	N	<20	50	20	N	20	N	200	100	N	50	<200	200	N
CW115	15	100	N	<20	50	20	N	20	N	200	100	N	70	<200	300	N
CW116	15	500	N	<20	30	70	N	20	N	200	100	N	100	<200	1,000	N
CW117	15	200	N	<20	30	10	N	15	N	200	200	N	30	<200	700	N
CW118	15	70	N	<20	30	10	N	15	N	200	100	N	20	<200	200	N
CW119	15	20	N	<20	50	10	N	20	N	300	100	N	20	<200	200	N
CW120	50	50	50	<20	20	1,000	N	15	N	200	100	N	70	300	1,000	N
CW121	15	50	N	<20	30	20	N	15	N	200	100	N	50	<200	200	N
CW122	15	100	N	<20	20	20	N	15	N	200	100	N	30	<200	300	N
CW123	15	50	N	20	20	10	N	20	N	300	100	N	100	<200	500	N
CW124	15	50	N	<20	50	10	N	20	N	300	100	N	20	<200	500	N
CW125	15	70	N	<20	50	20	N	20	N	200	70	N	30	<200	500	N
CW126	15	150	N	<20	50	20	N	20	N	200	70	N	50	<200	500	N
CW127	15	50	N	<20	20	20	N	15	N	200	70	N	20	<200	200	N
CW128	50	20	N	<20	20	20	N	15	N	300	70	N	20	<200	500	N
CW129	15	100	N	20	30	15	N	15	N	200	100	N	30	<200	700	N
CW130	15	50	N	<20	30	30	N	15	N	300	100	N	20	<200	200	N
CW131	15	100	N	20	30	20	N	15	N	200	100	N	30	<200	500	N
CW132	15	20	N	<20	30	20	N	15	N	200	50	N	20	<200	500	N
CW133	15	100	N	<20	20	50	N	10	N	300	50	N	30	<200	700	N
CW134	15	100	N	<20	50	20	N	15	N	200	50	N	20	<200	200	N
CW135	15	50	N	<20	20	10	N	15	N	200	50	N	30	<200	700	N

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO	S-CR
CW136	33 28 30	115 2 35	5	1.0	1.0	.2	1,000	N	N	N	20	500	1	N	N	20	70
CW137	33 28 46	115 1 35	5	1.0	1.0	.5	1,000	N	N	N	30	500	1	N	N	15	100
CW138	33 28 23	115 6 30	10	2.0	2.0	1.0	2,000	N	N	N	10	300	1	N	N	30	200
CW139	33 27 41	115 5 49	10	2.0	2.0	1.0	2,000	1.0	N	N	10	500	N	N	N	50	300
CW140	33 28 47	115 5 2	10	2.0	2.0	1.0	2,000	N	N	N	20	700	1	N	N	20	200
CW141	33 28 46	115 4 30	10	2.0	2.0	1.0	2,000	N	N	N	20	700	1	N	N	30	100
CW142	33 29 48	115 4 18	5	2.0	1.0	.5	1,000	N	N	N	10	500	1	N	N	10	70
CW143	33 29 33	115 3 25	5	2.0	1.0	.5	1,000	N	N	N	20	500	2	N	N	15	70
CW144	33 29 41	115 2 30	5	2.0	1.0	.5	1,000	N	N	N	20	500	2	N	N	15	70
CW145	33 30 0	115 1 2	5	2.0	1.0	.5	1,000	N	N	N	20	500	1	N	N	15	70
CW146	33 30 35	114 57 57	2	1.0	1.0	.3	500	N	N	N	30	500	2	N	N	10	50
CW147	33 31 0	114 56 49	5	1.0	1.0	.5	700	N	N	N	50	500	1	N	N	15	100
CW148	33 30 35	114 56 24	5	2.0	1.0	.5	700	N	N	N	30	500	1	N	N	15	100
CW149	33 30 17	114 57 3	5	2.0	1.0	.5	1,000	N	N	N	20	500	1	N	N	15	200
CW150	33 29 34	114 58 18	3	2.0	1.0	.5	700	N	N	N	20	500	2	N	N	20	70
CW151	33 28 59	114 58 37	5	2.0	1.0	.5	700	N	N	N	50	500	2	N	N	15	100
CW152	33 29 5	114 59 14	5	2.0	1.0	.5	700	N	N	N	50	500	2	N	N	15	70
CW153	33 29 6	114 59 54	5	2.0	1.0	.5	700	N	N	N	50	500	2	N	N	15	70
CW154	33 28 41	115 0 41	5	2.0	1.0	.5	1,000	N	N	N	50	700	2	N	N	15	70
CW155	33 26 35	115 4 20	5	2.0	1.0	.5	700	N	N	N	30	500	2	N	N	15	100
CW156	33 40 30	115 23 40	10	2.0	1.0	1.0	3,000	N	N	N	20	500	2	N	N	15	70
CW157	33 40 42	115 24 39	10	.5	.2	.5	700	N	N	N	10	100	1	N	N	15	50
CW158	33 41 0	115 25 30	10	1.0	.5	.2	1,000	N	N	N	10	200	1	N	N	10	50
CW159	33 40 42	115 30 36	5	1.0	1.0	.5	700	N	N	N	30	500	2	N	N	10	50
CW160	33 39 2	115 30 29	5	1.0	1.0	.5	1,000	N	N	N	50	500	2	N	N	15	50
CW161	33 36 36	115 29 54	3	1.0	1.0	.3	700	N	N	N	20	500	2	N	N	15	50
CW162	33 36 0	115 29 53	5	2.0	1.0	.7	700	N	N	N	20	700	2	N	N	10	70
CW163	33 35 28	115 29 36	5	1.0	1.0	.5	700	N	N	N	20	700	2	N	N	10	70
CW164	33 35 5	115 29 3	5	1.0	1.0	.5	700	N	N	N	30	500	1	N	N	10	70
CW165	33 34 3	115 28 18	5	1.0	1.0	.5	1,000	N	N	N	20	500	1	N	N	10	100
CW166	33 34 26	115 27 22	5	1.0	1.0	.5	1,000	N	N	N	20	700	2	N	N	15	100
CW167	33 34 9	115 27 12	5	1.0	1.0	.5	700	N	N	N	20	700	2	N	N	10	70
CW168	33 33 50	115 26 57	5	1.0	1.0	.5	700	N	N	N	20	500	2	N	N	10	70
CW169	33 32 38	115 24 41	5	1.0	1.0	.5	700	N	N	N	50	500	2	N	N	10	100
CW170	33 32 5	115 22 13	5	1.0	1.0	.5	700	N	N	N	10	500	2	N	N	10	100
CW171	33 31 59	115 20 55	15	.5	1.0	1.0	2,000	N	N	N	30	500	1	N	N	20	20
CW172	33 35 20	115 15 23	10	1.0	1.0	.5	1,000	N	N	N	30	500	1	N	N	20	50
CW173	33 36 43	115 15 51	5	2.0	2.0	1.0	1,000	N	N	N	30	700	2	N	N	20	70
CW174	33 37 11	115 16 54	5	1.0	2.0	.5	1,000	N	N	N	20	500	2	N	N	20	70
CW175	33 36 19	115 14 33	5	1.0	1.0	.3	500	N	N	N	20	500	2	N	N	10	50
CW176	33 35 29	115 14 33	5	1.0	1.0	.5	700	N	N	N	20	500	2	N	N	10	50
CW177	33 33 59	115 14 20	5	1.0	1.0	1.0	1,000	N	N	N	30	500	2	N	N	20	100
CW178	33 34 9	115 15 23	5	1.0	1.0	1.0	1,000	N	N	N	20	500	2	N	N	15	70
CW179	33 34 0	115 15 3	10	1.0	1.0	1.0	1,000	N	N	N	20	500	2	N	N	20	100
CW180	33 39 6	115 19 36	5	1.0	1.0	.5	1,000	N	N	N	20	500	2	N	N	15	70

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	S-TH
CW136	20	100	N	<20	20	50	N	15	N	200	50	N	30	<200	300	N
CW137	15	100	N	<20	20	30	N	15	N	200	50	N	50	<200	500	N
CW138	20	100	N	30	50	15	<100	30	N	200	50	N	50	<200	1,000	N
CW139	30	200	N	20	30	20	N	30	N	N	200	N	50	<200	1,000	N
CW140	20	70	N	<20	20	20	N	20	N	500	100	N	100	<200	>1,000	N
CW141	20	70	N	<20	30	20	N	20	N	500	100	N	100	<200	1,000	N
CW142	15	50	N	<20	20	50	N	15	N	200	100	N	30	<200	200	N
CW143	15	100	N	<20	30	30	N	20	N	500	100	N	50	<200	500	N
CW144	15	50	N	N	50	50	N	15	N	500	100	N	30	<200	500	N
CW145	15	50	N	<20	30	20	N	15	N	500	100	N	50	<200	500	N
CW146	10	30	N	N	20	20	N	10	N	500	100	N	30	<200	200	N
CW147	15	30	N	<20	30	50	N	15	N	200	100	N	50	<200	500	N
CW148	15	50	N	<20	30	20	N	15	N	200	100	N	30	<200	200	N
CW149	15	70	N	<20	50	20	N	20	N	200	100	N	50	<200	500	N
CW150	15	100	N	<20	30	30	N	15	N	200	100	N	50	<200	500	N
CW151	20	200	N	<20	30	30	N	20	N	200	100	N	50	<200	500	N
CW152	20	50	N	<20	30	30	N	15	N	200	100	N	30	<200	200	N
CW153	20	50	N	<20	30	30	N	15	N	200	100	N	30	<200	200	N
CW154	20	50	N	20	30	50	N	15	N	300	100	N	50	<200	500	N
CW155	15	50	N	<20	30	30	N	15	N	200	100	N	30	<200	200	N
CW156	20	100	N	20	20	70	N	15	N	300	200	N	200	<200	1,000	100
CW157	10	100	N	20	10	N	N	10	N	100	100	N	30	<200	500	N
CW158	20	70	N	<20	5	70	N	10	N	100	100	N	20	<200	200	N
CW159	15	200	N	20	30	50	N	20	N	200	70	N	200	<200	500	N
CW160	15	200	N	<20	30	100	N	20	N	300	100	N	100	<200	500	N
CW161	15	200	N	<20	20	30	N	15	N	200	50	N	50	<200	200	N
CW162	15	100	N	<20	20	100	N	15	<10	200	70	N	50	<200	500	N
CW163	15	100	N	<20	20	50	N	15	N	200	70	N	50	<200	500	N
CW164	20	500	N	<20	30	50	N	50	N	200	70	N	150	<200	1,000	100
CW165	15	700	N	<20	20	100	N	50	<10	500	100	N	500	<200	1,000	200
CW166	20	200	N	20	50	50	N	20	<10	200	100	N	100	<200	500	N
CW167	15	100	N	<20	30	50	N	20	N	200	100	N	100	<200	500	N
CW168	15	100	N	<20	20	20	N	15	N	200	70	N	50	<200	500	N
CW169	20	100	N	20	30	200	N	20	N	200	100	N	100	<200	700	N
CW170	20	100	N	<20	30	10	N	15	N	200	100	N	50	<200	200	N
CW171	50	500	10	20	20	20	N	15	N	300	200	N	100	200	1,000	N
CW172	20	200	N	<20	30	10	N	20	N	200	200	N	50	<200	500	N
CW173	50	200	N	20	30	50	N	20	N	500	200	N	50	<200	500	N
CW174	20	200	N	20	30	20	N	15	N	500	200	N	50	<200	500	N
CW175	15	30	N	<20	20	20	N	15	N	200	50	N	30	<200	150	N
CW176	15	500	N	<20	30	30	N	20	N	200	100	N	50	<200	1,000	N
CW177	20	200	N	20	30	50	N	20	N	200	100	N	100	<200	1,000	N
CW178	20	100	N	<20	30	50	N	15	N	200	50	N	50	<200	500	N
CW179	20	100	N	50	30	20	N	15	N	200	50	N	100	<200	1,000	N
CW180	20	200	N	20	30	20	N	20	N	300	100	N	50	<200	500	N

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO	S-CR
CW196	33 37 32	115 18 6	10	1.0	1.0	.5	1,000	N	N	N	50	500	2	N	N	20	70
CW198	33 37 7	115 18 36	5	1.0	1.0	.3	700	N	N	N	50	500	2	N	N	15	50
CW199	33 37 30	115 19 6	5	1.0	1.0	.5	700	N	N	N	50	500	2	N	N	15	50
CW200	33 35 56	115 27 39	5	1.0	1.0	.3	700	N	N	N	50	500	2	N	N	15	50
CW201	33 36 17	115 29 17	5	1.0	1.0	.5	700	N	N	N	20	500	2	N	N	20	30
CW202	33 36 19	115 29 7	5	1.0	1.0	.5	700	N	N	N	20	500	1	N	N	20	70
CW203	33 36 40	115 29 10	5	1.0	.7	.3	500	N	N	N	10	300	N	N	N	15	70
CW204	33 36 42	115 28 48	2	.5	.7	.2	200	N	N	N	<10	100	1	N	N	N	50
CW205	33 36 39	115 28 25	20	1.0	1.0	1.0	2,000	N	N	N	50	500	1	N	N	50	50
CW206	33 36 43	115 28 25	5	1.0	2.0	.5	1,000	N	N	N	30	500	2	N	N	15	50
CW211	33 37 20	115 19 44	5	2.0	1.0	.3	700	N	N	N	20	500	1	N	N	20	50
CW212	33 37 19	115 20 42	20	1.0	.7	.3	700	N	N	N	70	300	1	N	N	50	50
CW215	33 37 58	115 20 24	5	1.0	1.0	.2	700	N	N	N	10	300	1	N	N	20	70
CW216	33 37 58	115 20 45	5	2.0	1.0	.3	700	N	N	N	20	300	1	N	N	20	50
CW217	33 37 53	115 21 24	5	2.0	2.0	.3	700	N	N	N	50	500	2	N	N	10	50
CW219	33 38 14	115 21 24	10	1.0	1.0	.3	1,000	N	N	N	10	300	1	N	N	20	50
CW220	33 37 41	115 22 42	10	1.0	1.0	.5	1,000	N	N	N	20	500	1	N	N	20	50
CW221	33 38 24	115 23 17	10	1.0	1.0	.5	700	N	N	N	10	300	1	N	N	20	100
CW223	33 38 3	115 24 17	10	2.0	1.0	1.0	1,000	N	N	N	30	300	1	N	N	50	200
CW224	33 38 31	115 24 51	5	1.0	1.0	.3	700	N	N	N	20	500	1	N	N	15	50
CW226	33 38 29	115 24 30	5	1.0	1.0	.3	700	N	N	N	20	500	1	N	N	10	50
CW227	33 38 13	115 25 12	20	1.0	1.0	1.0	700	N	N	N	50	300	1	N	N	50	50
CW228	33 35 41	115 26 17	5	1.0	1.0	.5	700	N	N	N	30	500	1	N	N	20	70

TABLE 2. ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	S-TH
CW196	20	200	N	20	50	50	N	15	N	200	100	N	50	<200	300	N
CW198	15	100	N	<20	30	50	N	15	N	200	70	N	50	<200	500	N
CW199	15	100	N	<20	30	50	N	15	N	200	70	N	50	<200	200	N
CW200	15	200	N	<20	30	50	N	15	N	200	50	N	100	<200	300	N
CW201	20	200	N	<20	20	70	N	15	<10	200	70	N	100	<200	500	<100
CW202	20	100	N	<20	30	20	N	15	N	200	50	N	50	<200	500	N
CW203	15	50	N	<20	20	20	N	15	<10	100	50	N	20	<200	200	N
CW204	10	20	N	<20	10	10	N	5	N	N	20	N	50	<200	500	N
CW205	20	1,000	N	<20	20	30	N	30	N	200	100	N	500	200	1,000	<100
CW206	20	100	N	20	20	30	N	15	<10	300	100	N	100	<200	500	N
CW211	50	50	N	<20	30	20	N	15	N	200	100	N	50	<200	200	N
CW212	50	300	N	<20	30	30	N	10	N	300	500	N	30	200	1,000	100
CW215	20	50	N	<20	20	30	N	15	<10	200	100	N	20	<200	300	N
CW216	20	50	N	<20	20	30	N	15	<10	200	50	N	20	<200	200	N
CW217	15	50	N	<20	20	50	N	15	N	300	50	N	20	<200	200	N
CW219	20	100	N	<20	30	20	N	20	N	300	100	N	20	<200	200	N
CW220	15	200	N	20	20	30	N	15	N	300	100	N	50	<200	1,000	<100
CW221	15	200	N	<20	20	20	N	15	<10	200	100	N	30	<200	500	N
CW223	50	100	N	20	100	10	N	20	N	200	200	N	50	200	1,000	N
CW224	20	100	N	<20	20	50	N	10	N	200	70	N	20	<200	300	N
CW226	15	100	N	<20	20	50	N	10	<10	200	100	N	100	<200	200	N
CW227	20	500	N	<20	20	20	N	15	N	300	500	N	100	200	1,000	N
CW228	20	100	N	<20	30	50	N	20	<10	200	50	N	50	<200	500	N

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA

(N, NOT DETECTED; <, DETECTED BUT BELOW THE LIMIT OF DETERMINATION SHOWN; >, DETERMINED TO BE GREATER THAN THE VALUE SHOWN.)

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
CW001C3	33 39 54	115 29 54	.2000	.30	50.0	2.0	100	N	N	N	<20	700	5	<20	N	N
CW002C3	33 39 22	115 28 36	.2000	.07	30.0	1.5	300	N	N	N	<20	700	<2	20	N	N
CW003C3	33 38 57	115 28 5	.3000	.10	10.0	>2.0	500	N	N	N	20	200	N	N	N	<10
CW004C3	33 38 13	115 28 0	.5000	.15	30.0	>2.0	700	N	N	N	<20	500	N	N	N	<10
CW005C3	33 38 11	115 28 1	.7000	.15	20.0	2.0	700	N	N	N	20	1,000	<2	N	N	<10
CW006C3	33 37 50	115 27 6	.5000	.05	10.0	2.0	500	N	N	N	<20	100	<2	N	N	<10
CW007C3	33 38 0	115 26 23	.5000	.15	10.0	>2.0	500	N	N	N	20	1,500	N	N	N	10
CW008C3	33 37 42	115 25 32	.2000	.05	20.0	1.0	500	N	N	N	<20	1,000	20	N	N	N
CW009C3	33 37 24	115 26 0	.5000	.07	30.0	2.0	500	N	N	N	<20	700	<2	N	N	N
CW010C3	33 37 22	115 26 5	.7000	.10	30.0	2.0	500	N	N	N	<20	1,000	5	N	N	N
CW011C3	33 37 29	115 27 25	.7000	.07	50.0	1.5	500	N	N	N	<20	100	7	30	N	N
CW012C3	33 36 12	115 26 27	5.0000	.15	50.0	2.0	200	5	N	N	<20	50	30	50	N	15
CW013C3	33 36 2	115 26 32	1.0000	.20	20.0	1.0	700	N	N	N	30	1,000	5	N	N	N
CW014C3	33 35 26	115 26 0	.7000	.10	30.0	.7	300	N	N	N	<20	500	10	1,000	N	N
CW015C3	33 35 22	115 26 9	.7000	.15	30.0	.7	500	N	N	N	<20	200	N	150	N	N
CW016C3	33 34 54	115 26 22	.7000	.30	20.0	2.0	700	N	N	N	<20	1,000	15	N	N	N
CW017C3	33 34 47	115 26 17	.7000	.30	50.0	1.0	700	N	N	N	70	200	20	N	N	N
CW018C3	33 34 48	115 26 12	.7000	.07	50.0	.5	500	N	N	N	20	100	N	N	N	N
CW019C3	33 33 30	115 26 17	1.0000	.20	20.0	>2.0	500	N	N	N	<20	300	20	N	N	N
CW020C3	33 33 57	115 27 18	.3000	.07	30.0	1.0	300	10	N	N	<20	3,000	N	N	N	N
CW021C3	33 34 18	115 27 51	.2000	.10	50.0	.3	700	20	N	N	<20	50	N	N	N	N
CW022C3	33 35 32	115 28 42	.7000	.10	50.0	1.5	500	N	N	N	<20	100	N	N	N	N
CW023C3	33 40 48	115 29 54	.3000	.30	50.0	1.5	150	N	N	N	<20	200	10	N	N	N
CW024C3	33 40 47	115 28 48	.2000	.05	50.0	1.0	200	N	N	N	<20	200	7	N	N	N
CW025C3	33 40 36	115 26 19	.5000	.10	20.0	>2.0	1,500	N	N	N	<20	<50	N	N	N	<10
CW026C3	33 40 36	115 26 7	.7000	.20	10.0	>2.0	1,000	N	N	N	20	500	N	N	N	10
CW027C3	33 40 39	115 24 14	1.0000	.20	10.0	>2.0	700	N	N	N	<20	300	N	N	N	<10
CW028C3	33 41 38	115 20 24	1.0000	.15	10.0	>2.0	1,000	N	N	N	<20	100	N	20	N	<10
CW029C3	33 41 19	115 20 7	1.0000	.20	7.0	>2.0	1,000	N	N	N	<20	200	N	N	N	<10
CW030C3	33 41 15	115 27 9	1.0000	.15	30.0	2.0	2,000	N	N	N	20	<50	2	N	N	10
CW031C3	33 40 36	115 28 12	.3000	.10	50.0	2.0	500	N	N	N	<20	3,000	<2	N	N	N
CW032C3	33 40 32	115 28 17	.3000	.07	20.0	1.5	300	N	N	N	<20	100	5	N	N	N
CW033C3	33 39 30	115 25 39	.7000	.15	10.0	>2.0	700	N	N	N	<20	300	N	N	N	10
CW034C3	33 39 38	115 22 57	.7000	.20	10.0	>2.0	1,000	N	N	N	20	150	N	150	N	10
CW035C3	33 39 35	115 22 55	.7000	.20	15.0	>2.0	1,000	N	N	N	20	1,000	N	N	N	10
CW036C3	33 38 38	115 22 41	.5000	.20	10.0	>2.0	500	N	N	N	<20	100	N	<20	N	<10
CW037C3	33 40 3	115 20 16	.7000	.15	10.0	>2.0	1,000	N	N	N	<20	100	N	20	N	<10
CW038C3	33 40 15	115 19 50	1.0000	.15	10.0	>2.0	1,500	N	N	N	<20	200	N	N	N	<10
CW039C3	33 40 27	115 18 36	1.0000	.20	10.0	>2.0	1,000	N	N	N	20	300	N	N	N	<10
CW040C3	33 39 39	115 18 44	1.0000	.30	7.0	>2.0	700	N	N	N	<20	1,000	N	N	N	<10
CW041C3	33 39 6	115 18 7	.5000	.20	10.0	>2.0	700	N	N	N	<20	1,500	N	N	N	<10
CW042C3	33 38 5	115 17 51	2.0000	.30	2.0	2.0	500	N	N	N	70	1,500	3	N	N	N
CW043C3	33 38 55	115 20 30	.5000	.15	5.0	2.0	300	N	N	N	20	700	2	200	N	N
CW044C3	33 39 0	115 20 29	.5000	.10	10.0	>2.0	500	N	N	N	<20	500	N	N	N	N
CW045C3	33 41 26	115 21 24	.7000	.15	7.0	>2.0	700	N	N	N	<20	100	<2	N	N	<10

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA

SAMPLE	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR
CW001C3	<20	<10	200	N	300	N	50	N	100	500	N	50	700	2,000	N	>2,000
CW002C3	<20	<10	200	100	150	N	700	N	30	50	N	30	10,000	5,000	N	>2,000
CW003C3	<20	<10	700	15	200	N	30	N	20	100	N	200	N	700	N	>2,000
CW004C3	<20	N	500	10	150	N	20	N	20	70	N	300	N	700	N	>2,000
CW005C3	20	<10	500	N	150	<10	100	N	30	70	N	200	<100	1,000	N	>2,000
CW006C3	<20	N	500	20	150	N	20	N	20	50	N	150	500	700	N	>2,000
CW007C3	20	<10	500	20	200	N	20	N	20	50	N	500	100	500	N	>2,000
CW008C3	<20	N	150	N	70	N	<20	N	<10	<20	N	50	<100	1,500	N	>2,000
CW009C3	<20	N	200	20	150	N	20	N	15	30	N	100	1,000	1,500	N	>2,000
CW010C3	20	N	150	50	300	N	20	N	20	100	N	100	<100	1,500	N	>2,000
CW011C3	<20	N	300	100	150	<10	500	N	20	50	N	70	1,000	5,000	N	>2,000
CW012C3	20	200	200	30	200	10	700	N	15	N	N	50	300	2,000	700	2,000
CW013C3	70	15	300	N	70	10	700	N	20	N	N	70	500	1,000	N	>2,000
CW014C3	<20	30	<50	200	50	10	1,000	N	20	N	N	200	2,000	1,500	N	>2,000
CW015C3	<20	15	1,000	100	50	<10	1,000	N	30	N	N	150	700	2,000	N	>2,000
CW016C3	50	<10	500	50	150	N	500	N	20	100	N	150	1,000	2,000	N	>2,000
CW017C3	70	<10	700	50	70	<10	1,000	N	30	N	N	200	700	5,000	N	>2,000
CW018C3	<20	<10	<50	50	N	<10	1,000	N	30	N	N	100	1,500	2,000	N	>2,000
CW019C3	20	<10	300	50	100	<10	700	N	20	<20	N	200	700	1,000	N	>2,000
CW020C3	<20	50	150	200	<50	<10	5,000	N	20	N	N	70	700	1,500	N	>2,000
CW021C3	<20	N	300	<10	N	<10	200	N	20	N	N	30	N	2,000	N	>2,000
CW022C3	<20	N	200	N	100	N	500	N	<10	<20	N	70	200	2,000	N	>2,000
CW023C3	<20	N	300	N	150	<10	70	N	70	500	N	50	300	5,000	N	>2,000
CW024C3	<20	<10	200	N	70	N	50	N	30	N	N	30	100	5,000	N	>2,000
CW025C3	30	N	700	20	150	N	20	N	20	30	N	500	N	1,000	N	>2,000
CW026C3	<20	10	500	10	150	N	50	N	50	30	N	200	N	1,000	N	>2,000
CW027C3	<20	10	500	10	150	N	200	N	20	50	N	200	N	700	N	>2,000
CW028C3	<20	<10	700	20	200	N	20	N	30	100	N	200	N	1,000	N	>2,000
CW029C3	<20	<10	700	30	200	N	150	N	20	70	N	200	N	700	N	>2,000
CW030C3	<20	15	500	<10	150	N	200	N	20	N	N	150	N	3,000	N	>2,000
CW031C3	<20	<10	300	N	70	<10	100	N	<10	N	N	100	100	3,000	N	>2,000
CW032C3	<20	<10	200	N	100	<10	100	N	<10	<20	N	50	N	5,000	N	>2,000
CW033C3	20	<10	700	20	200	N	50	N	30	70	N	200	N	1,000	N	>2,000
CW034C3	<20	<10	700	20	200	N	50	N	30	70	N	200	N	1,000	N	>2,000
CW035C3	<20	<10	1,000	30	300	N	30	N	30	100	N	500	N	1,000	N	>2,000
CW036C3	<20	N	300	10	150	N	150	N	10	<20	N	200	N	500	N	>2,000
CW037C3	20	N	1,000	10	200	N	20	N	30	70	N	200	N	1,000	N	>2,000
CW038C3	<20	N	700	10	300	N	<20	N	30	100	N	200	N	700	N	>2,000
CW039C3	30	N	700	30	500	N	<20	N	30	150	N	300	N	1,000	N	>2,000
CW040C3	30	N	500	10	200	N	20	N	20	70	N	300	100	1,000	N	>2,000
CW041C3	20	N	500	15	100	N	20	N	20	50	N	200	200	1,000	N	>2,000
CW042C3	20	70	100	N	150	N	20	N	20	N	N	100	N	300	N	>2,000
CW043C3	<20	<10	100	N	100	<10	100	N	<10	N	N	100	N	700	N	>2,000
CW044C3	20	N	500	<10	150	N	<20	N	20	N	N	300	N	700	N	>2,000
CW045C3	<20	<10	500	<10	300	N	20	N	30	100	N	100	N	1,000	N	>2,000

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA

SAMPLE	S-TH
CW001C3	N
CW002C3	N
CW003C3	500
CW004C3	<200
CW005C3	200
CW006C3	N
CW007C3	1,500
CW008C3	N
CW009C3	N
CW010C3	N
CW011C3	N
CW012C3	N
CW013C3	N
CW014C3	N
CW015C3	200
CW016C3	200
CW017C3	<200
CW018C3	N
CW019C3	N
CW020C3	<200
CW021C3	N
CW022C3	<200
CW023C3	N
CW024C3	<200
CW025C3	200
CW026C3	2,000
CW027C3	1,500
CW028C3	300
CW029C3	<200
CW030C3	5,000
CW031C3	500
CW032C3	N
CW033C3	1,500
CW034C3	1,500
CW035C3	700
CW036C3	N
CW037C3	300
CW038C3	<200
CW039C3	<200
CW040C3	1,000
CW041C3	500
CW042C3	300
CW043C3	N
CW044C3	N
CW045C3	1,500

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
CW046C3	33 40 44	115 22 59	1.0000	.15	15.0	>2.0	700	N	N	N	<20	1,500	N	700	N	15
CW047C3	33 37 8	115 23 18	1.0000	.15	20.0	>2.0	1,000	N	N	N	<20	500	N	20	N	10
CW048C3	33 36 48	115 22 51	.7000	.20	30.0	>2.0	700	N	N	N	<20	700	N	N	N	10
CW049C3	33 36 36	115 22 26	.7000	.15	10.0	>2.0	700	N	N	N	<20	150	N	N	N	10
CW050C3	33 35 52	115 22 59	1.5000	.15	30.0	2.0	500	N	N	N	<20	300	70	50	N	N
CW051C3	33 36 33	115 24 15	1.0000	.20	7.0	>2.0	500	N	N	N	20	1,000	N	<20	N	<10
CW052C3	33 35 49	115 24 23	.5000	.07	30.0	.7	500	N	N	N	<20	300	N	N	N	N
CW053C3	33 35 43	115 24 25	.1500	.05	50.0	.5	500	N	N	N	<20	<50	N	70	N	N
CW054C3	33 36 13	115 25 3	.5000	.10	50.0	2.0	500	N	N	N	<20	500	N	200	N	N
CW055C3	33 36 49	115 24 36	.7000	.07	50.0	.5	700	N	N	N	<20	150	N	N	N	N
CW056C3	33 37 30	115 23 49	1.0000	.20	10.0	>2.0	500	N	N	N	20	700	N	N	N	<10
CW057C3	33 39 48	115 22 30	1.5000	.20	10.0	>2.0	700	N	N	N	<20	500	N	N	N	20
CW058C3	33 36 31	115 27 18	.3000	.10	10.0	2.0	500	N	N	N	<20	300	3	N	N	N
CW059C3	33 36 23	115 27 21	.5672	.10	30.0	1.0	500	N	N	N	<20	500	N	N	N	N
CW060C3	33 34 0	115 23 21	.5000	.20	30.0	1.0	500	N	N	N	<20	150	N	1,000	N	N
CW061C3	33 33 56	115 23 27	.7000	.10	30.0	.7	500	N	N	N	<20	500	5	200	N	N
CW062C3	33 34 12	115 22 44	.5000	.15	10.0	1.0	200	N	N	N	<20	300	3	N	N	N
CW063C3	33 34 30	115 21 50	1.0000	.30	50.0	1.0	300	N	N	N	20	300	50	N	N	N
CW064C3	33 34 24	115 21 12	.7000	.30	10.0	1.0	300	N	N	N	20	500	2	N	N	N
CW065C3	33 33 17	115 21 18	.5000	.10	50.0	1.0	500	N	N	N	<20	300	N	N	N	N
CW066C3	33 33 13	115 21 25	.5000	.15	20.0	1.0	500	N	N	N	20	150	N	150	N	N
CW067C3	33 32 38	115 23 51	1.0000	.20	20.0	2.0	300	N	N	N	20	2,000	N	N	N	10
CW068C3	33 33 21	115 24 16	.2000	.05	30.0	1.0	500	N	N	N	<20	50	N	N	N	N
CW069C3	33 33 25	115 24 24	.3000	.10	20.0	.3	300	N	N	N	<20	200	2	N	N	N
CW070C3	33 33 25	115 24 35	.3000	.10	50.0	.7	500	N	N	N	<20	150	5	100	N	N
CW071C3	33 33 3	115 25 45	.7000	.20	20.0	1.5	500	N	N	N	20	300	7	N	N	N
CW072C3	33 33 2	115 24 53	.2000	.07	30.0	.7	700	N	N	N	<20	150	N	N	N	N
CW073C3	33 32 5	115 22 48	.7000	.15	7.0	1.0	300	N	N	N	<20	5,000	N	700	N	N
CW074C3	33 32 0	115 21 37	.7000	.30	7.0	1.0	300	N	N	N	20	1,500	N	2,000	N	N
CW075C3	33 32 17	115 19 49	.5000	<.05	7.0	>2.0	300	N	N	N	<20	1,500	N	N	N	10
CW076C3	33 32 43	115 19 55	.7000	.20	10.0	2.0	500	N	N	N	<20	700	N	150	N	<10
CW077C3	33 32 43	115 19 48	.3000	.15	10.0	.7	300	N	N	N	<20	500	N	N	N	N
CW079C3	33 33 0	115 18 29	.5000	.10	10.0	>2.0	500	N	N	N	<20	100	N	N	N	<10
CW080C3	33 32 34	115 16 53	.7000	.05	10.0	>2.0	700	N	N	N	<20	100	N	N	N	10
CW081C3	33 35 10	115 19 54	.7000	.07	2.0	2.0	300	N	N	N	20	150	N	N	N	10
CW082C3	33 34 30	115 20 3	.2000	.07	50.0	.3	500	N	N	N	<20	700	N	N	N	<10
CW083C3	33 36 35	115 20 55	.7000	.15	7.0	>2.0	500	N	N	N	20	500	<2	N	N	10
CW084C3	33 36 47	115 19 48	.3000	.20	10.0	2.0	300	N	N	N	<20	700	N	N	N	<10
CW085C3	33 35 0	115 18 3	.5000	.05	1.5	1.5	150	N	N	N	20	300	N	N	N	10
CW086C3	33 36 31	115 18 6	.5000	<.05	1.5	1.0	100	N	N	N	<20	100	N	N	N	10
CW087C3	33 36 36	115 18 7	.7000	.10	7.0	>2.0	500	N	N	N	50	700	N	150	N	10
CW088C3	33 35 41	115 17 39	.5000	.20	2.0	.5	200	N	N	N	20	700	3	N	N	<10
CW089C3	33 35 57	115 17 17	.5000	.20	5.0	>2.0	500	N	N	N	20	1,000	2	N	N	<10
CW090C3	33 35 36	115 16 31	.3000	.07	5.0	2.0	200	N	N	N	<20	700	N	N	N	<10
CW091C3	33 34 22	115 15 29	.5000	.10	5.0	.7	200	N	N	N	20	500	N	N	N	10

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR
CW046C3	20	20	700	30	200	N	200	N	30	70	N	500	N	1,000	N	>2,000
CW047C3	20	<10	1,000	30	500	N	30	N	30	100	N	300	N	1,500	N	>2,000
CW048C3	20	<10	700	20	200	N	70	N	20	50	N	300	N	1,000	N	>2,000
CW049C3	20	<10	1,000	30	500	N	3,000	N	30	100	N	700	N	1,000	N	>2,000
CW050C3	<20	N	200	30	100	N	700	N	20	30	N	100	N	2,000	N	>2,000
CW051C3	20	<10	200	N	150	<10	150	N	15	N	N	200	<100	1,000	N	>2,000
CW052C3	<20	N	100	N	<50	N	30	N	10	N	N	50	<100	2,000	N	>2,000
CW053C3	<20	N	150	70	N	N	200	N	10	N	N	20	200	1,500	N	>2,000
CW054C3	20	10	100	70	150	<10	700	N	20	50	N	100	<100	1,500	N	>2,000
CW055C3	<20	20	200	N	N	<10	500	N	10	N	N	70	300	2,000	N	>2,000
CW056C3	<20	<10	300	15	150	<10	<20	N	15	30	N	500	N	500	N	>2,000
CW057C3	<20	<10	700	70	200	<10	200	N	15	70	N	200	N	500	N	2,000
CW058C3	50	N	200	30	100	N	700	N	N	N	N	100	1,000	500	N	>2,000
CW059C3	<20	N	300	15	50	N	20	N	N	N	N	100	1,000	700	N	>2,000
CW060C3	<20	<10	150	20	50	N	200	N	10	N	N	150	100	1,500	N	>2,000
CW061C3	<20	N	150	50	50	N	500	N	N	N	N	150	100	1,500	N	>2,000
CW062C3	<20	<10	100	100	<50	<10	2,000	N	<10	N	N	200	200	2,000	N	>2,000
CW063C3	<20	<10	200	N	50	<10	500	N	10	N	N	100	N	3,000	N	>2,000
CW064C3	<20	<10	100	N	50	10	500	N	15	N	N	100	N	2,000	N	>2,000
CW065C3	30	N	100	N	50	<10	500	N	N	N	N	70	N	2,000	N	>2,000
CW066C3	20	<10	150	N	70	<10	1,000	N	<10	N	N	100	200	1,000	N	>2,000
CW067C3	20	<10	100	30	100	10	500	N	<10	N	N	300	1,000	1,000	N	>2,000
CW068C3	<20	N	150	N	50	N	200	N	N	N	N	70	<100	2,000	N	>2,000
CW069C3	<20	<10	100	500	<50	N	5,000	N	<10	N	N	700	500	700	N	>2,000
CW070C3	<20	<10	150	150	50	N	700	N	10	N	N	100	200	1,500	N	>2,000
CW071C3	20	N	150	300	100	N	1,000	N	10	2,000	N	50	1,500	2,000	N	>2,000
CW072C3	<20	N	200	30	70	N	150	N	15	N	N	30	N	2,000	N	>2,000
CW073C3	<20	<10	150	30	<50	10	1,000	N	50	N	N	500	1,000	1,000	N	>2,000
CW074C3	70	<10	200	30	50	10	1,000	N	30	N	N	700	2,000	700	N	>2,000
CW075C3	20	10	300	<10	200	<10	50	N	15	N	N	300	300	500	N	>2,000
CW076C3	<20	<10	200	N	100	<10	700	N	30	70	N	200	300	700	N	>2,000
CW077C3	<20	<10	200	N	<50	<10	70	N	50	N	N	70	150	1,500	N	>2,000
CW079C3	20	N	500	<10	200	N	<20	N	15	N	N	200	N	700	N	>2,000
CW080C3	30	10	700	10	200	N	<20	N	20	70	N	700	100	1,000	N	>2,000
CW081C3	<20	10	N	70	150	15	1,000	N	30	100	N	200	<100	1,000	N	>2,000
CW082C3	<20	<10	200	N	N	N	100	N	20	30	N	30	<100	1,500	N	>2,000
CW083C3	20	10	700	20	300	N	50	N	20	N	N	300	N	500	N	>2,000
CW084C3	<20	N	500	<10	100	N	150	N	10	30	N	150	200	700	N	>2,000
CW085C3	<20	<10	<50	N	<50	15	<20	N	30	N	<200	70	N	700	N	>2,000
CW086C3	N	<10	<50	N	<50	20	<20	N	30	N	<200	70	N	700	N	>2,000
CW087C3	20	<10	500	15	500	N	50	N	15	N	N	200	300	700	N	>2,000
CW088C3	<20	N	N	N	50	<10	30	N	N	100	N	30	700	150	N	>2,000
CW089C3	<20	<10	300	N	150	<10	30	N	20	N	N	150	N	700	N	>2,000
CW090C3	<20	<10	200	N	<50	15	20	N	30	N	N	70	150	700	N	>2,000
CW091C3	N	<10	100	N	N	15	<20	N	30	N	N	30	N	700	N	>2,000

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-TH
CW046C3	500
CW047C3	700
CW048C3	1,000
CW049C3	1,500
CW050C3	N
CW051C3	500
CW052C3	N
CW053C3	N
CW054C3	N
CW055C3	200
CW056C3	500
CW057C3	N
CW058C3	N
CW059C3	N
CW060C3	N
CW061C3	N
CW062C3	<200
CW063C3	N
CW064C3	N
CW065C3	N
CW066C3	N
CW067C3	1,000
CW068C3	N
CW069C3	N
CW070C3	N
CW071C3	N
CW072C3	N
CW073C3	N
CW074C3	N
CW075C3	2,000
CW076C3	N
CW077C3	300
CW079C3	500
CW080C3	2,000
CW081C3	N
CW082C3	N
CW083C3	1,500
CW084C3	N
CW085C3	200
CW086C3	200
CW087C3	300
CW088C3	N
CW089C3	<200
CW090C3	500
CW091C3	N

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
CW092C3	33 33 6	115 14 30	.5000	.07	2.0	.5	200	N	N	N	<20	300	N	N	N	<10
CW093C3	33 33 17	115 16 0	.5000	.07	2.0	.3	150	N	N	N	<20	1,500	N	N	N	<10
CW094C3	33 35 6	115 17 32	.5000	.05	7.0	>2.0	500	N	N	N	20	200	N	N	N	10
CW095C3	33 31 9	115 15 30	.5000	.15	7.0	1.5	300	N	N	N	20	1,000	N	N	N	N
CW097C3	33 31 27	115 15 55	1.5000	.30	7.0	2.0	500	N	N	N	<20	100	N	N	N	10
CW098C3	33 31 37	115 17 0	.3000	.07	10.0	.7	300	<1	N	N	<20	500	N	N	N	<10
CW099C3	33 32 3	115 17 36	.7000	.05	15.0	>2.0	700	10	N	N	<20	300	N	N	N	10
CW100C3	33 31 23	115 18 30	.3000	.05	10.0	.2	300	N	N	N	<20	500	N	N	N	N
CW101C3	33 31 42	115 18 42	.7000	.10	20.0	>2.0	700	N	N	N	20	700	N	N	N	10
CW102C3	33 30 42	115 19 23	1.0000	.30	5.0	1.5	500	N	N	N	50	700	50	70	N	N
CW103C3	33 30 25	115 18 41	.2000	.10	7.0	1.0	300	N	N	N	<20	1,000	2	150	N	N
CW104C3	33 30 15	115 17 54	.7000	.30	7.0	>2.0	500	N	N	N	30	2,000	N	N	N	10
CW105C3	33 30 8	115 17 21	.5000	.20	30.0	.5	500	N	N	N	20	1,000	N	N	N	10
CW106C3	33 30 0	115 16 9	.7000	.07	7.0	1.0	300	N	N	N	<20	100	N	N	N	<10
CW107C3	33 30 9	115 15 44	1.0000	.30	30.0	.7	200	N	N	N	<20	1,500	5	500	N	N
CW108C3	33 29 18	115 16 11	1.0000	.30	10.0	2.0	500	N	N	N	<20	>10,000	N	N	N	<10
CW109C3	33 27 25	115 14 12	.5000	.05	7.0	2.0	500	N	N	<20	<20	>10,000	N	N	N	10
CW110C3	33 28 14	115 7 50	.7000	.20	10.0	>2.0	700	N	N	N	<20	1,500	N	N	N	15
CW111C3	33 28 33	115 9 0	.5000	.10	7.0	>2.0	300	N	N	N	20	300	N	N	N	10
CW112C3	33 28 44	115 9 53	.7000	.10	10.0	>2.0	500	N	N	N	<20	300	N	N	N	10
CW113C3	33 29 35	115 10 36	.5000	.10	20.0	>2.0	500	N	N	N	<20	200	N	N	N	10
CW114C3	33 29 27	115 11 39	.7000	.20	20.0	1.5	300	N	N	N	<20	500	N	N	N	N
CW115C3	33 29 18	115 11 53	1.0000	.30	5.0	.7	150	N	N	N	<20	700	N	N	N	<10
CW116C3	33 29 55	115 13 53	.3000	.07	20.0	1.0	500	N	N	N	<20	300	N	N	N	N
CW117C3	33 30 41	115 13 43	.7000	.10	10.0	>2.0	700	N	N	N	20	200	N	N	N	10
CW118C3	33 28 35	115 12 20	1.0000	.50	10.0	2.0	500	N	N	N	20	700	N	N	N	10
CW119C3	33 28 23	115 12 36	.7000	.20	5.0	.7	200	N	N	N	<20	300	N	N	N	N
CW120C3	33 29 21	115 13 7	1.0000	.10	10.0	.5	300	N	N	20	<20	10,000	N	N	N	N
CW121C3	33 29 41	115 13 36	1.0000	.15	7.0	1.0	500	N	N	N	<20	2,000	N	50	N	<10
CW122C3	33 31 29	115 14 42	1.0000	.20	5.0	2.0	500	N	N	N	20	300	<2	N	N	10
CW123C3	33 27 9	115 12 18	.5000	.15	2.0	1.5	150	N	N	N	<20	1,500	N	N	N	10
CW124C3	33 27 36	115 12 12	.7000	.50	2.0	1.5	150	N	N	N	20	1,000	3	N	N	10
CW125C3	33 27 30	115 11 41	1.0000	.30	2.0	1.0	200	N	N	N	20	2,000	N	N	N	10
CW126C3	33 26 35	115 10 55	1.0000	.15	10.0	>2.0	500	N	N	N	<20	200	N	N	N	10
CW127C3	33 26 14	115 10 19	1.0000	.07	10.0	>2.0	500	N	N	N	<20	300	N	N	N	15
CW128C3	33 26 30	115 9 24	1.0000	.20	7.0	>2.0	500	N	N	N	20	500	N	N	N	10
CW129C3	33 26 2	115 7 24	.3000	.20	.5	.5	100	N	N	N	<20	150	N	N	N	10
CW130C3	33 26 6	115 6 0	1.5000	.70	2.0	>2.0	500	N	N	N	20	700	7	N	N	10
CW131C3	33 26 16	115 4 56	1.0000	.50	1.5	2.0	200	N	N	N	<20	700	10	N	N	10
CW132C3	33 26 33	115 4 50	.7000	.30	3.0	2.0	300	N	N	N	<20	2,000	N	N	N	10
CW133C3	33 27 17	115 3 36	1.0000	.50	2.0	2.0	200	N	N	N	<20	>10,000	N	N	N	10
CW135C3	33 27 56	115 3 0	.5000	.10	1.5	1.5	200	N	N	N	20	200	N	N	N	10
CW136C3	33 28 30	115 2 35	.7000	.10	5.0	>2.0	700	N	N	N	<20	1,500	N	N	N	10
CW137C3	33 28 46	115 1 35	.7000	.10	5.0	>2.0	500	N	N	N	<20	10,000	N	N	N	10
CW138C3	33 28 23	115 6 30	.5000	.05	3.0	.3	150	N	N	N	<20	100	N	N	N	<10

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR
CW092C3	N	<10	<50	N	N	20	<20	N	20	N	<200	30	N	700	N	>2,000
CW093C3	N	<10	100	N	N	20	150	N	30	N	<200	30	N	700	N	>2,000
CW094C3	20	<10	500	<10	200	<10	<20	N	10	50	N	300	N	700	N	>2,000
CW095C3	<20	<10	100	N	50	10	50	N	15	N	<200	150	N	700	N	>2,000
CW097C3	70	100	300	N	100	10	50	N	30	30	N	200	N	1,000	N	>2,000
CW098C3	<20	<10	100	N	N	10	700	N	20	N	N	70	N	1,000	N	>2,000
CW099C3	20	10	700	15	300	N	20	N	20	100	N	500	300	700	N	>2,000
CW100C3	<20	30	<50	1,500	N	<10	50,000	N	20	N	N	500	100	1,500	N	>2,000
CW101C3	20	<10	500	20	200	N	700	N	20	70	<200	300	500	700	N	>2,000
CW102C3	70	<10	<50	<10	50	<10	2,000	N	<10	N	N	150	1,500	200	N	>2,000
CW103C3	<20	<10	<50	N	N	<10	500	N	50	N	N	70	N	700	N	>2,000
CW104C3	20	<10	200	N	150	10	70	N	50	50	N	200	N	700	N	>2,000
CW105C3	<20	<10	200	N	N	10	70	N	30	N	N	50	N	1,000	N	>2,000
CW106C3	<20	<10	100	N	50	10	50	N	20	N	N	70	N	700	N	>2,000
CW107C3	20	10	200	N	<50	<10	500	N	<10	N	300	100	N	500	N	>2,000
CW108C3	50	<10	200	N	150	10	20	N	30	<20	>10,000	150	N	700	N	>2,000
CW109C3	30	<10	300	N	200	<10	50	N	30	700	2,000	200	N	700	N	>2,000
CW110C3	100	10	500	20	500	N	20	N	20	100	N	700	<100	700	N	>2,000
CW111C3	<20	10	300	10	300	N	20	N	<10	30	N	300	N	500	N	2,000
CW112C3	20	10	500	30	200	N	20	N	<10	70	N	500	N	700	N	2,000
CW113C3	<20	<10	500	<10	300	N	50	N	<10	30	N	200	N	700	N	>2,000
CW114C3	<20	30	200	100	50	<10	2,000	N	10	N	N	300	N	1,000	N	>2,000
CW115C3	<20	20	<50	50	<50	<10	1,000	N	N	N	N	200	700	300	N	>2,000
CW116C3	<20	<10	150	N	50	<10	100	N	20	200	N	70	300	1,000	N	>2,000
CW117C3	20	<10	500	20	300	N	20	N	10	70	N	300	N	1,000	N	2,000
CW118C3	70	<10	200	N	150	<10	50	N	10	<20	<200	100	N	700	N	>2,000
CW119C3	<20	N	<50	N	50	<10	20	N	<10	N	500	70	N	200	N	>2,000
CW120C3	<20	<10	300	N	<50	10	1,000	N	30	N	500	500	100	1,000	<500	>2,000
CW121C3	20	<10	300	30	70	<10	700	N	15	<20	N	100	N	700	N	>2,000
CW122C3	<20	10	500	N	300	N	30	N	<10	50	N	500	N	500	N	2,000
CW123C3	<20	<10	100	N	70	15	150	N	30	150	N	100	N	700	N	>2,000
CW124C3	70	<10	100	N	50	15	30	N	50	50	N	100	N	700	N	>2,000
CW125C3	20	<10	200	N	<50	15	100	N	30	30	N	100	N	700	N	>2,000
CW126C3	30	N	700	70	300	N	N	N	<10	70	N	500	N	700	N	2,000
CW127C3	30	N	700	100	500	N	N	N	<10	100	N	500	<100	700	N	1,000
CW128C3	20	N	500	50	300	N	N	N	10	70	N	500	N	500	N	2,000
CW129C3	20	N	<50	N	<50	20	N	N	20	N	N	70	N	500	N	>2,000
CW130C3	150	N	200	<10	100	15	<20	N	50	30	N	300	N	700	N	>2,000
CW131C3	150	<10	150	<10	100	15	70	N	30	700	N	100	N	500	N	>2,000
CW132C3	70	<10	200	<10	150	N	<20	N	30	200	N	200	N	700	N	>2,000
CW133C3	20	N	150	15	200	<10	2,000	N	15	2,000	>10,000	200	N	500	N	>2,000
CW135C3	20	<10	150	N	<50	15	N	N	20	N	<200	70	N	500	N	>2,000
CW136C3	<20	N	500	30	200	N	N	N	N	30	N	150	N	500	N	2,000
CW137C3	20	<10	300	<10	200	N	150	N	20	30	N	200	300	700	N	>2,000
CW138C3	<20	<10	300	N	N	<10	N	N	15	N	N	50	N	500	N	>2,000

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-TH
CW092C3	N
CW093C3	200
CW094C3	300
CW095C3	300
CW097C3	300
CW098C3	N
CW099C3	2,000
CW100C3	N
CW101C3	500
CW102C3	N
CW103C3	N
CW104C3	500
CW105C3	N
CW106C3	N
CW107C3	N
CW108C3	N
CW109C3	1,500
CW110C3	1,500
CW111C3	2,000
CW112C3	2,000
CW113C3	1,000
CW114C3	500
CW115C3	200
CW116C3	N
CW117C3	1,500
CW118C3	200
CW119C3	N
CW120C3	N
CW121C3	<200
CW122C3	3,000
CW123C3	2,000
CW124C3	700
CW125C3	1,500
CW126C3	700
CW127C3	300
CW128C3	300
CW129C3	<200
CW130C3	500
CW131C3	N
CW132C3	200
CW133C3	500
CW135C3	<200
CW136C3	N
CW137C3	1,000
CW138C3	N

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
CW139C3	33 27 41	115 5 49	1.0000	.15	3.0	.3	200	N	N	N	20	500	N	N	N	<10
CW140C3	33 28 47	115 5 2	.3000	.10	1.5	.2	100	N	N	N	<20	150	N	N	N	10
CW141C3	33 28 46	115 4 30	.5000	.10	2.0	.3	150	N	N	N	<20	500	N	N	N	<10
CW142C3	33 29 48	115 4 18	.5000	.15	7.0	2.0	500	N	N	N	<20	2,000	N	N	N	<10
CW143C3	33 29 33	115 3 25	.5000	.10	7.0	2.0	700	N	N	N	<20	5,000	N	N	N	10
CW144C3	33 29 41	115 2 30	1.0000	.20	7.0	2.0	500	N	N	N	20	2,000	N	N	N	10
CW145C3	33 30 0	115 1 2	.7000	.20	7.0	2.0	700	N	N	N	<20	>10,000	N	N	N	10
CW146C3	33 30 35	114 57 57	.5000	.30	7.0	2.0	300	N	N	N	50	>10,000	N	N	N	10
CW147C3	33 31 0	114 56 49	.5000	.30	7.0	2.0	200	N	N	N	20	3,000	N	N	N	<10
CW148C3	33 30 35	114 56 24	.5000	.20	7.0	2.0	200	N	N	N	<20	1,000	N	N	N	10
CW149C3	33 30 17	114 57 3	1.0000	.30	5.0	2.0	200	N	N	N	50	5,000	N	N	N	<10
CW150C3	33 29 34	114 58 18	1.5000	.70	5.0	2.0	300	N	N	N	50	2,000	N	N	N	<10
CW151C3	33 28 59	114 58 37	.7000	.50	5.0	2.0	300	N	N	N	<20	5,000	N	N	N	10
CW152C3	33 29 5	114 59 14	1.0000	.50	7.0	2.0	300	N	N	N	20	1,000	N	N	N	10
CW153C3	33 29 6	114 59 54	.5000	.30	10.0	>2.0	700	N	N	N	<20	>10,000	N	N	N	1,500
CW154C3	33 28 41	115 0 41	.3000	.20	5.0	1.0	500	N	N	N	<20	>10,000	N	N	N	<10
CW155C3	33 26 35	115 4 20	5.0000	10.00	7.0	2.0	2,000	N	N	N	50	1,000	N	N	N	70
CW156C3	33 40 30	115 23 40	1.0000	.20	1.5	.7	200	N	N	N	20	300	3	N	N	20
CW157C3	33 40 42	115 24 39	1.0000	.70	7.0	>2.0	1,000	N	N	N	<20	100	N	N	N	10
CW158C3	33 41 0	115 25 30	1.5000	.50	5.0	2.0	1,000	N	N	N	20	300	<2	30	N	10
CW159C3	33 40 42	115 30 36	5.0000	.70	10.0	2.0	1,000	N	N	N	<20	300	7	N	N	30
CW160C3	33 39 2	115 30 29	1.5000	.30	7.0	>2.0	500	N	N	N	<20	150	N	N	N	10
CW161C3	33 36 36	115 29 54	1.5000	.50	10.0	>2.0	500	N	N	N	100	200	50	N	N	10
CW162C3	33 36 0	115 29 53	1.5000	.70	10.0	>2.0	1,000	N	N	N	<20	500	3	N	N	20
CW163C3	33 35 28	115 29 36	1.5000	.50	30.0	>2.0	700	N	N	N	<20	1,000	2	20	N	15
CW164C3	33 35 5	115 29 3	3.0000	.50	10.0	1.0	1,000	N	N	N	<20	150	N	N	N	15
CW165C3	33 34 3	115 28 18	.7000	.20	20.0	1.0	500	N	N	N	<20	200	N	N	N	<10
CW166C3	33 34 26	115 27 22	2.0000	.50	10.0	>2.0	1,000	N	N	N	20	700	<2	20	N	20
CW167C3	33 34 9	115 27 12	1.5000	.30	10.0	2.0	700	N	N	N	<20	1,500	2	N	N	<10
CW168C3	33 33 50	115 26 57	2.0000	.70	7.0	2.0	1,000	N	N	N	20	700	5	<20	N	20
CW169C3	33 32 38	115 24 41	.5000	.07	20.0	2.0	500	10	N	N	<20	500	N	N	N	N
CW170C3	33 32 5	115 22 13	2.0000	1.00	10.0	2.0	700	N	N	N	70	700	N	N	N	20
CW171C3	33 31 59	115 20 55	.7000	.20	5.0	1.0	200	N	N	N	<20	700	N	100	N	N
CW172C3	33 35 20	115 15 23	2.0000	.50	2.0	1.5	500	N	N	N	20	700	N	N	N	10
CW173C3	33 36 43	115 15 51	2.0000	.50	1.5	1.0	500	N	N	N	<20	500	7	N	N	10
CW175C3	33 36 19	115 14 33	1.5000	.30	10.0	2.0	500	N	N	N	<20	1,500	N	N	N	10
CW176C3	33 35 29	115 14 33	1.5000	.30	10.0	>2.0	700	N	N	N	20	700	N	N	N	10
CW177C3	33 33 59	115 14 20	2.0000	.50	15.0	2.0	500	N	N	N	20	>10,000	N	N	N	10
CW178C3	33 34 9	115 15 23	2.0000	.50	7.0	2.0	500	N	N	N	<20	5,000	N	1,500	N	10
CW179C3	33 34 0	115 15 3	.7000	.20	5.0	1.5	200	N	N	N	20	1,000	N	N	N	10
CW180C3	33 39 6	115 19 36	.7000	.15	7.0	2.0	500	N	N	N	<20	200	N	N	N	<10
CW196C3	33 37 32	115 18 6	1.5000	.70	10.0	>2.0	1,500	N	N	N	20	300	<2	N	N	10
CW198C3	33 37 7	115 18 36	1.5000	.50	10.0	>2.0	1,000	N	N	N	20	<50	N	N	N	15
CW199C3	33 37 30	115 19 6	1.5000	.50	7.0	>2.0	1,000	N	N	N	<20	150	N	N	N	10
CW200C3	33 35 56	115 27 39	2.0000	.70	10.0	1.0	700	N	N	N	20	1,000	<2	150	N	10

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR
CW139C3	<20	<10	300	N	N	<10	<20	N	10	N	<200	50	N	500	N	>2,000
CW140C3	<20	<10	200	N	N	15	<20	N	15	N	N	50	N	500	N	>2,000
CW141C3	<20	10	300	N	N	15	<20	N	15	N	N	70	N	500	N	>2,000
CW142C3	<20	<10	300	<10	100	N	20	N	20	N	N	200	100	700	N	>2,000
CW143C3	<20	20	500	30	150	N	N	N	15	30	N	200	700	700	N	>2,000
CW144C3	20	<10	300	20	200	<10	700	N	30	50	N	300	700	700	N	>2,000
CW145C3	30	<10	500	N	150	<10	<20	N	30	<20	700	300	N	700	N	>2,000
CW146C3	70	<10	200	N	150	N	30	N	20	N	>10,000	150	N	500	N	>2,000
CW147C3	20	<10	150	<10	100	<10	<20	N	15	N	N	100	N	500	N	>2,000
CW148C3	<20	<10	200	N	100	10	50	N	20	N	N	150	N	700	N	>2,000
CW149C3	50	<10	200	10	150	<10	<20	N	15	N	<200	150	150	500	N	>2,000
CW150C3	50	100	100	N	200	20	500	N	10	N	<200	200	N	200	N	2,000
CW151C3	70	20	200	10	200	15	150	N	30	N	<200	200	N	500	N	>2,000
CW152C3	70	N	300	<10	200	10	<20	N	10	30	N	200	700	200	N	>2,000
CW153C3	70	<10	500	10	200	10	<20	N	30	30	<200	300	100	1,000	N	>2,000
CW154C3	20	<10	150	N	100	<10	<20	N	15	N	<200	70	N	500	N	>2,000
CW155C3	2,000	15	300	10	150	70	<20	N	70	N	N	500	N	300	N	>2,000
CW156C3	<20	10	100	N	150	N	20	N	N	N	N	70	200	500	N	>2,000
CW157C3	20	<10	1,000	15	300	N	50	N	50	150	N	200	N	2,000	N	>2,000
CW158C3	<20	70	500	20	200	N	700	N	20	50	N	200	N	700	N	>2,000
CW159C3	70	30	2,000	20	200	10	200	N	50	100	N	70	300	2,000	N	>2,000
CW160C3	20	<10	700	15	200	<10	50	N	15	200	N	200	N	1,500	N	>2,000
CW161C3	70	<10	500	N	200	10	100	N	30	70	N	150	200	1,500	N	>2,000
CW162C3	30	15	700	15	200	<10	500	N	50	100	N	150	N	1,000	N	>2,000
CW163C3	20	10	2,000	150	200	N	1,000	N	30	50	N	150	N	1,500	N	>2,000
CW164C3	50	10	>2,000	N	<50	10	150	N	30	N	N	70	N	2,000	N	>2,000
CW165C3	<20	<10	500	50	50	10	700	N	20	N	N	50	N	1,500	N	>2,000
CW166C3	50	15	500	150	300	15	1,000	N	20	100	N	150	1,000	1,500	N	>2,000
CW167C3	30	10	700	10	150	<10	500	N	20	70	N	70	150	2,000	700	>2,000
CW168C3	70	20	1,500	20	300	20	500	N	50	100	N	150	200	2,000	N	>2,000
CW169C3	<20	15	300	500	150	N	10,000	N	15	50	N	50	200	2,000	N	>2,000
CW170C3	100	15	1,000	20	150	30	100	N	30	<20	700	200	700	700	N	>2,000
CW171C3	<20	15	100	<10	50	N	20	N	N	N	500	50	1,000	300	N	>2,000
CW172C3	<20	15	<50	<10	70	<10	20	N	<10	N	N	70	200	200	N	>2,000
CW173C3	<20	20	<50	N	100	10	N	N	<10	N	N	70	300	200	N	>2,000
CW175C3	<20	<10	500	10	150	<10	50	N	15	50	N	150	N	1,000	N	>2,000
CW176C3	20	<10	300	20	200	N	20	N	20	150	N	150	N	3,000	N	>2,000
CW177C3	70	20	500	N	100	10	3,000	N	30	N	1,000	500	N	2,000	N	>2,000
CW178C3	50	10	300	N	100	10	300	N	20	N	N	200	200	1,000	N	>2,000
CW179C3	<20	50	300	N	50	15	5,000	N	20	N	N	1,000	300	1,000	N	>2,000
CW180C3	20	N	700	10	150	N	<20	N	10	30	N	150	N	500	N	2,000
CW196C3	50	<10	1,000	20	300	15	150	N	30	150	N	200	300	1,500	N	2,000
CW198C3	<20	<10	200	20	700	N	N	N	30	200	N	200	<100	3,000	N	2,000
CW199C3	<20	<10	500	30	500	N	100	N	20	150	N	150	N	1,500	N	1,000
CW200C3	50	N	>2,000	10	100	10	1,000	N	30	150	N	500	2,000	1,000	N	>2,000

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-TH
CW139C3	N
CW140C3	N
CW141C3	N
CW142C3	<200
CW143C3	<200
CW144C3	N
CW145C3	N
CW146C3	700
CW147C3	300
CW148C3	200
CW149C3	N
CW150C3	N
CW151C3	N
CW152C3	N
CW153C3	1,000
CW154C3	500
CW155C3	N
CW156C3	2,000
CW157C3	1,000
CW158C3	2,000
CW159C3	500
CW160C3	<200
CW161C3	200
CW162C3	200
CW163C3	1,500
CW164C3	1,000
CW165C3	N
CW166C3	1,000
CW167C3	500
CW168C3	2,000
CW169C3	N
CW170C3	700
CW171C3	N
CW172C3	<200
CW173C3	N
CW175C3	N
CW176C3	<200
CW177C3	200
CW178C3	500
CW179C3	1,500
CW180C3	N
CW196C3	300
CW198C3	N
CW199C3	N
CW200C3	1,500

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
CW201C3	33 36 17	115 29 17	3.0000	.70	10.0	2.0	1,000	N	N	N	20	1,500	<2	N	N	15
CW202C3	33 36 19	115 29 7	1.0000	.15	30.0	>2.0	700	N	N	N	<20	150	N	N	N	10
CW203C3	33 36 40	115 29 10	.7000	.15	5.0	2.0	500	N	N	N	<20	300	N	N	N	<10
CW204C3	33 36 42	115 28 48	.7000	.20	20.0	>2.0	700	N	N	N	<20	5,000	N	N	N	<10
CW205C3	33 36 39	115 28 25	1.5000	.50	10.0	>2.0	500	N	N	N	<20	1,500	3	N	N	<10
CW206C3	33 36 43	115 28 25	.5000	.10	7.0	2.0	300	N	N	N	<20	300	<2	N	N	N
CW211C3	33 37 20	115 19 44	1.0000	.30	7.0	>2.0	700	N	N	N	<20	200	N	N	N	15
CW212C3	33 37 19	115 20 42	.7000	.15	5.0	2.0	500	N	N	N	20	500	2	N	N	15
CW215C3	33 37 58	115 20 24	.7000	.20	7.0	>2.0	700	N	N	N	<20	700	N	N	N	15
CW216C3	33 37 58	115 20 45	1.0000	.20	15.0	>2.0	1,000	N	N	N	20	300	N	N	N	15
CW219C3	33 38 14	115 21 24	1.0000	.50	20.0	>2.0	1,000	N	N	N	<20	500	N	20	N	20
CW220C3	33 37 41	115 22 42	1.0000	.50	10.0	>2.0	1,000	N	N	N	<20	700	N	N	N	20
CW221C3	33 38 24	115 23 17	.7000	.30	10.0	>2.0	1,000	N	N	N	<20	1,000	N	50	N	20
CW224C3	33 38 31	115 24 51	2.0000	.50	10.0	>2.0	1,500	N	N	N	20	100	2	200	N	30
CW226C3	33 38 29	115 24 30	1.5000	.50	10.0	>2.0	1,000	N	N	N	<20	100	N	N	N	15
CW227C3	33 38 13	115 25 12	.7000	.15	7.0	2.0	300	N	N	N	<20	150	2	N	N	20

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR
CW201C3	50	15	>2,000	10	200	10	150	N	50	70	N	200	100	2,000	N	>2,000
CW202C3	20	N	300	50	300	N	100	N	20	150	N	100	N	2,000	N	2,000
CW203C3	<20	<10	200	20	150	N	150	N	20	100	N	70	150	1,000	N	>2,000
CW204C3	20	<10	300	10	200	N	200	N	30	100	N	150	300	1,500	N	>2,000
CW205C3	30	10	700	<10	200	N	70	N	30	70	N	100	<100	1,000	N	>2,000
CW206C3	20	N	150	<10	200	N	20	N	<10	50	N	70	700	700	N	>2,000
CW211C3	30	50	700	50	300	N	700	N	15	70	N	300	<100	700	N	>2,000
CW212C3	<20	70	500	10	200	N	1,000	N	10	<20	N	200	200	500	N	>2,000
CW215C3	<20	N	150	30	1,000	N	<20	N	20	150	N	200	150	2,000	N	2,000
CW216C3	<20	N	150	20	700	N	20	N	30	200	N	200	N	2,000	N	>2,000
CW219C3	30	N	500	30	500	<10	150	N	30	150	N	300	N	3,000	N	>2,000
CW220C3	20	10	1,000	20	300	N	300	N	50	100	N	300	500	2,000	N	>2,000
CW221C3	20	30	1,000	30	300	N	1,000	N	70	100	N	500	N	1,500	N	>2,000
CW224C3	20	20	2,000	<10	200	N	150	N	70	100	N	200	N	2,000	N	>2,000
CW226C3	20	50	1,000	15	500	N	5,000	N	70	150	N	700	N	2,000	N	2,000
CW227C3	<20	15	500	<10	150	<10	100	N	20	<20	N	200	N	500	N	>2,000

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-TH
CW201C3	1,500
CW202C3	N
CW203C3	300
CW204C3	N
CW205C3	300
CW206C3	N
CW211C3	<200
CW212C3	5,000
CW215C3	N
CW216C3	N
CW219C3	300
CW220C3	>5,000
CW221C3	3,000
CW224C3	>5,000
CW226C3	2,000
CW227C3	>5,000

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR
CW201C3	50	15	>2,000	10	200	10	150	N	50	70	N	200	100	2,000	N	>2,000
CW202C3	20	N	300	50	300	N	100	N	20	150	N	100	N	2,000	N	2,000
CW203C3	<20	<10	200	20	150	N	150	N	20	100	N	70	150	1,000	N	>2,000
CW204C3	20	<10	300	10	200	N	200	N	30	100	N	150	300	1,500	N	>2,000
CW205C3	30	10	700	<10	200	N	70	N	30	70	N	100	<100	1,000	N	>2,000
CW206C3	20	N	150	<10	200	N	20	N	<10	50	N	70	700	700	N	>2,000
CW211C3	30	50	700	50	300	N	700	N	15	70	N	300	<100	700	N	>2,000
CW212C3	<20	70	500	10	200	N	1,000	N	10	<20	N	200	200	500	N	>2,000
CW215C3	<20	N	150	30	1,000	N	<20	N	20	150	N	200	150	2,000	N	2,000
CW216C3	<20	N	150	20	700	N	20	N	30	200	N	200	N	2,000	N	>2,000
CW219C3	30	N	500	30	500	<10	150	N	30	150	N	300	N	3,000	N	>2,000
CW220C3	20	10	1,000	20	300	N	300	N	50	100	N	300	500	2,000	N	>2,000
CW221C3	20	30	1,000	30	300	N	1,000	N	70	100	N	500	N	1,500	N	>2,000
CW224C3	20	20	2,000	<10	200	N	150	N	70	100	N	200	N	2,000	N	>2,000
CW226C3	20	50	1,000	15	500	N	5,000	N	70	150	N	700	N	2,000	N	2,000
CW227C3	<20	15	500	<10	150	<10	100	N	20	<20	N	200	N	500	N	>2,000

TABLE 3. ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE CHUCKWALLA MOUNTAINS WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA--CONTINUED

SAMPLE	S-TH
CW201C3	1,500
CW202C3	N
CW203C3	300
CW204C3	N
CW205C3	300
CW206C3	N
CW211C3	<200
CW212C3	5,000
CW215C3	N
CW216C3	N
CW219C3	300
CW220C3	>5,000
CW221C3	3,000
CW224C3	>5,000
CW226C3	2,000
CW227C3	>5,000

Table 4.--Latitudes and longitudes of samples not appearing on Plate 1.

(C3--heavy mineral concentrate, S--stream sediment)

Sample	Latitude	Longitude
CW131C3,S	33 26 16	115 04 56
CW132C3,S	33 26 33	115 04 50
CW133C3,S	33 27 17	115 03 36
CW134S	33 27 30	115 03 35
CW135C3,S	33 27 56	115 03 00
CW136C3,S	33 28 30	115 02 35
CW137C3,S	33 28 46	115 01 35
CW141C3,S	33 28 46	115 04 30
CW142C3,S	33 29 48	115 04 18
CW143C3,S	33 29 33	115 03 25
CW144C3,S	33 29 41	115 02 30
CW145C3,S	33 30 00	115 01 02
CW146C3,S	33 30 35	114 57 57
CW147C3,S	33 31 00	114 56 49
CW148C3,S	33 30 35	114 56 24
CW149C3,S	33 30 17	114 57 03
CW150C3,S	33 29 34	114 58 18
CW151C3,S	33 28 59	114 58 37
CW152C3,S	33 29 05	114 59 14
CW153C3,S	33 29 06	114 59 54
CW154C3,S	33 28 41	115 00 41
CW155C3,S	33 26 35	115 04 20